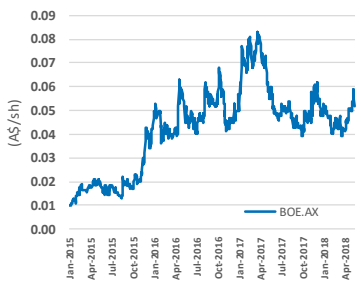
22nd May 2018

Sector: Mining

Commodities:

Uranium in Australia
Gold in Burkina Faso

Market data	
Ticker	BOE
Price (A$/sh)	0.056
Target Price (A$/sh)	0.105
Implied upside	84.5%
P/NAV	0.54x
12m High (A$/sh)	0.084
12m Low (A$/sh)	0.038
Shares (m)	1574.4m
Mkt Cap (A$m)	88.1m
Market	ASX



Source: ASX

Description

Boss Resources Limited is an ASX-listed exploration and development company. The company's primary focus is the Honeymoon uranium project in South Australia which Boss acquired from Uranium One. The previously operated mine is fully permitted, and Boss is planning a low capex re-start to create one of the lowest cost uranium producers globally. Boss also has a JV with Teranga Gold in Burkina Faso where Teranga is earning into the Golden Hill prospect.
www.bossresources.com.au

Board

Non-Exec Chairman	Mark Hohnen
MD/CEO	Duncan Craib
Non-Exec	Grant Davy
Non-Exec	Evan Cranston
Non-Exec	Peter Williams

Analyst

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Boss Resources Limited

Ready-built low-cost uranium capacity

Like many other uranium development companies, Boss is biding its time until the uranium price and market fundamentals incentivise new production. However, it's the quality of Boss's Honeymoon uranium project that really sets it apart and should ensure that when the uranium market turns, Boss will be the first cab off the rank. Honeymoon is a high-grade ISR deposit with a very low capex re-start option and staged expansion plan. The project is fully permitted with a 3.3Mlbs pa export licence and existing plant and infrastructure valued at over A$170m. Honeymoon can be brought back on-line in a mere 12-months and would rank as one of the lowest cost producers globally. Boss completed an $8m raise in March to advance a DFS.

- **100% Exposure.** In March 2018, Boss completed an agreement with Wattle Mining to acquire the remaining 20% of Honeymoon and move to 100% ownership ensuring that Boss secures full control of the asset at the a cyclical low-point in the uranium cycle. Boss has a good track record of resource growth, increasing the resource to 63.8Mlbs from 16.5Mlbs at the time of acquisition from Uranium One. The tenements have potential to give much more, and Boss has defined a 42-100Mlb exploration target, offering compelling growth opportunities.

- **Ready to Roll.** Honeymoon is a ready-built mine currently sitting on care and maintenance to the highest international standards. Boss inherited A$170m of plant and infrastructure that can be brought back into production with only a few minor modifications. Boss estimates that the recommissioning process to return Honeymoon to production could take a mere 12-months. We visited the project in January 2018 and were impressed by the quality and condition of the plant infrastructure. Uranium One built the "Rolls-Royce" of plants at Honeymoon.

- **Staged Expansion.** Boss has set out a low-cost, phased development plan. Stage 1 focuses on the re-start of the existing 0.88Mlbs pa SX plant for $10m. Stage 2 ($58m) envisages an expansion to 2Mlbs with the addition of new ion-exchange (IX), with Stage 3 ($78M) moving to 3.2Mlbs with the additional of a satellite operation at Goulds Dam. **Low cost.** The benefit of the sunk plant cost is that Honeymoon now has one of the lowest capital intensities in the whole uranium sector. Furthermore, the Stage 2 and 3 expansions should reduce C1 opex to $16/lb U_3O_8 putting the project in the lower quartile of the industry cost curve.

- **Historical performance eclipsed**. The Field Leach Trial was a major breakthrough, technically de-risking the restart plan and validating the use of IX technology. Significantly, Boss has tweaked the chemistry of the in-situ recovery process and wellfield design and achieved uranium tenors considerably higher than Uranium One, and higher than Boss's assumptions in its May 2017 PFS. This has considerable implications for production rates, capital spend and operating costs.

- **Uranium Waiting Game.** We are bullish on the outlook for uranium but remain cautious on the timing of any rebound in prices. With the continued build-out of reactor capacity, Japanese reactor restarts and persistent low volumes of contracting, we see current low prices as unsustainable. Global inventories remain high, but we believe that the producer/utility deadlock will start to fall apart when security of supply becomes an issue. We have likely seen the nadir of the market.

- **Gold JV in Burkina Faso.** Teranga (TSX:TGZ) is earning into the Golden Hill and Gourma projects in the prolific Houndé Belt, currently Teranga (51%), Boss (49%). Boss is free-carried until completion of a DFS and decision to mine. Recent drilling by Teranga has returned highly encouraging widths and grades at Golden Hill, including bonanza-style grades at Jackhammer Hill e.g. 14m at 110g/t Au. Although highly prospective, Boss's focus is on uranium and is considering potential divestment options to realise shareholder value from these high-quality gold assets.

- **Valuation.** Our near-term target price for Boss Resources is A¢10.5/sh. This is based on a punitively risked sum-of-the-parts NAV valuation of Honeymoon and implies that Boss is trading at an attractive 0.54x P/NAV discount. We see significant value uplift ahead if uranium prices improve and Boss meets development milestones.

Boss Resources offers an unparalleled opportunity to gain exposure to a low capital intensity and low-cost project with excellent leverage to the anticipated upswing in uranium fundamentals. Honeymoon is one of the only projects that can be fast-tracked to respond under this scenario. Given the position in the uranium cycle, the entry point to Boss at the current valuation is unlikely to come around again. Boss has a highly experienced Board, including Mark Hohnen, founder of Kalahari Minerals which held 43% of Extract Resources, owner of the Namibian Husab project, subsequently sold for $2.2bn.

Contents

Board of Directors

Mark Hohnen, Non-Executive Chairman

Mr. Hohnen was founding Executive Chairman of Kalahari Minerals Plc, founded in 2005 to explore for uranium and base metals in Namibia. **Kalahari also held a 43% interest in Extract Resources Ltd; which was the subject of a CGN corporate transaction in 2012 valued at US$2.2bn for its majority shareholding in the world-class Husab uranium mine in Namibia**, one of the largest mining and processing uranium projects in the world. Mr Hohnen has been involved in the mineral business since the late 1970s and has extensive experience in a wide range of industries including mining and exploration, property, investment, software and agriculture. He is an experienced director having held a number of directorships in both public and private companies. He is also the Executive Chairman of AIM listed Bacanora Resources and ASX listed Salt Lake Potash.

Duncan Craib, Managing Director & CEO

Mr Craib served as Finance Director to Swakop Uranium (Pty) Ltd from 2012 to 2016 where he was **heavily involved in the US$2.5bn development and construction of Husab**. Husab is currently being commissioned and once in production will be one of the largest mining and processing uranium projects in the world, producing 15Mlbs U_3O_8 p.a. Prior to 2012, Duncan served in London as CFO and Company Secretary to Kalahari Minerals Plc, and CFO of Universal Coal Plc.

Grant Davy, Non-Executive Director

Grant is a mining engineer with over 20 years' senior management and operational experience in the construction and operation of gold, platinum and coal mines in Africa, Australia, South America and Russia. More recently, he has been involved in venture capital investments in several exploration and mining projects and has been instrumental in developing the Panda Hill niobium project. Grant was responsible for the Vaal Reefs South Uranium plant between 2005 and 2008 when it produced up to 6Mlbs U_3O_8 p.a. and was one of the largest uranium producers in the southern hemisphere at the time.

Evan Cranston, Non-Executive Director

Mr Evan Cranston is a corporate lawyer with a broad experience in the areas of capital raising, IPOs, joint ventures, mergers and acquisitions, and corporate governance. He is also the Executive Chairman of New Century Resources and a Non-Executive Director of Carbine Resources Limited, Clancy Resources Limited and Cradle Resources Limited.

Peter Williams, Non-Executive Director

Mr Williams was formerly Chief Geophysicist and Manager of Geoscience Technology for WMC Resources. He was one of the founding members of Independence Group Limited and developed high powered 3 component 3D TEM applications that lead to the discovery of over 75,000t of nickel at the Victor Long Nickel Mine in Kambalda. Peter has extensive experience in West Africa where he was the vendor of Gryphon Minerals' Banfora Gold Project, was involved in the project generation of Papillion's Mali projects and was a founding director of Ampella Mining Ltd. Peter was a co-founder of the International Resource Sector Intelligence company, Intierra, and was a co-founder of the first dedicated hard rock mineral seismic company in the world, HiSeis.

Corporate Structure

Boss Energy Pty Ltd ("Boss Energy") is the holding company that owns 100% of Boss Uranium Pty Ltd and the Honeymoon Uranium Project. Boss Energy is now controlled 100% by Boss Resources Ltd (ASX: BOE) following the acquisition in March 2018 of the remaining 20% held by Wattle Mining Pty Ltd (Wattle is controlled by Mr Grant Davey, a director of the Company). Boss holds its Swedish and Burkina Faso gold projects through a variety of subsidiary companies. The Burkina projects are currently subject to a farm-out agreement with Teranga Gold (TSX:TGZ), where Boss has a free carried interest to completion of a DFS and decision to mine.

Cash. Boss had A$0.63m cash on the balance sheet at the end of March 2018, not including the A$7.47m net proceeds from the A$8m capital raise received in on 4th April, which brings current cash to approximately $8.1m.

Capital Structure

Shares. Boss has 1574.4m shares in issue including the 300m shares issued to Wattle Mining to satisfy the acquisition of the remaining 20% of the Honeymoon project, and the 200m shares from the March 2018 $8m capital raise.

Performance rights. Boss has 37.3m performance rights on issue which expire between November 2020 and August 2021 and vest on the satisfaction of various development, capital raising and share price milestones.

Options. Boss has 55.5m options in issue as detailed below:

Figure 1 - Options outstanding

Number	Exercise Price (A$)	Expiry Date
10,000,000	$0.02	31/08/2018
10,000,000	$0.065	09/01/2020
10,000,000	$0.08	09/01/2020
10,000,000	$0.095	09/01/2020
3,500,000	$0.065	19/03/2021
6,000,000	$0.08	19/03/2021
6,000,000	$0.095	19/03/2021
55,500,000		

Source: Boss, Shard Capital

Figure 2 - Major shareholders

	Name	Number of Shares	%
1	Grant Davey	311,483,333	19.78%
2	Mr Antonius Joseph Smit	83,000,000	5.27%
3	Tribeca Investment Partners	75,000,000	4.76%
4	National Nominees	57,704,292	3.67%

Board & Management		26.00%
Institutional holdings		20.00%
Top 20		55.00%
Top 50		71.00%
Total shares in issue	**1,574,403,008**	**100.00%**

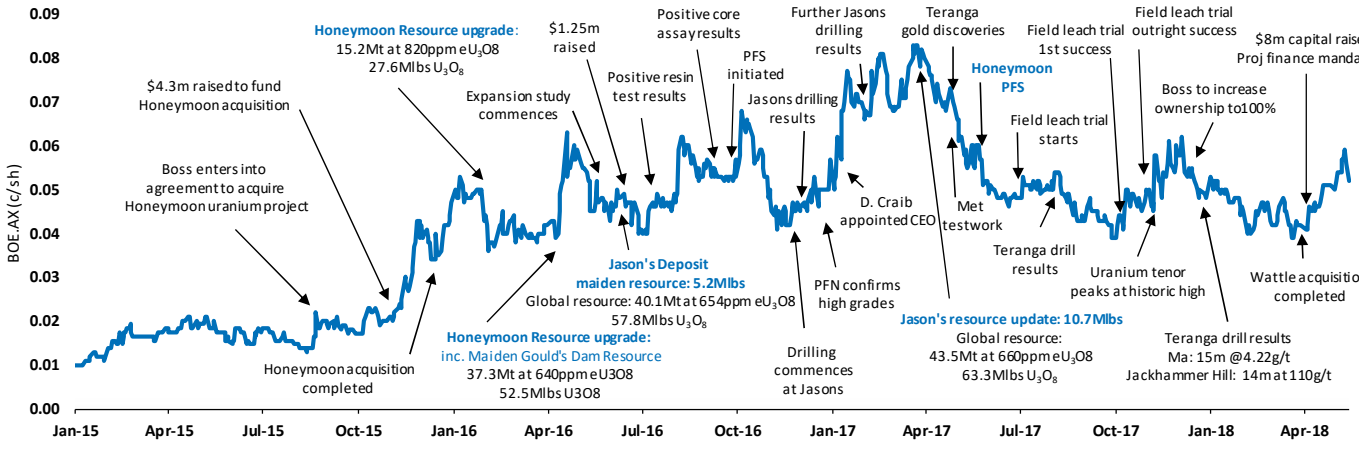
Source: Boss

Potted History and share price

Boss's focus throughout 2014 and 2015 was on its Scandinavian copper-nickel projects and Burkina Faso gold assets. In March 2014, Boss entered into a JV with Gryphon Minerals over its Golden Hill, Gourma and Tenkodogo gold projects located in Burkina Faso. Subsequent to acquisition of the Honeymoon uranium project in Q4 2015, only minimal work was undertaken on the Scandinavian assets as the company's focus turned to the Honeymoon project.

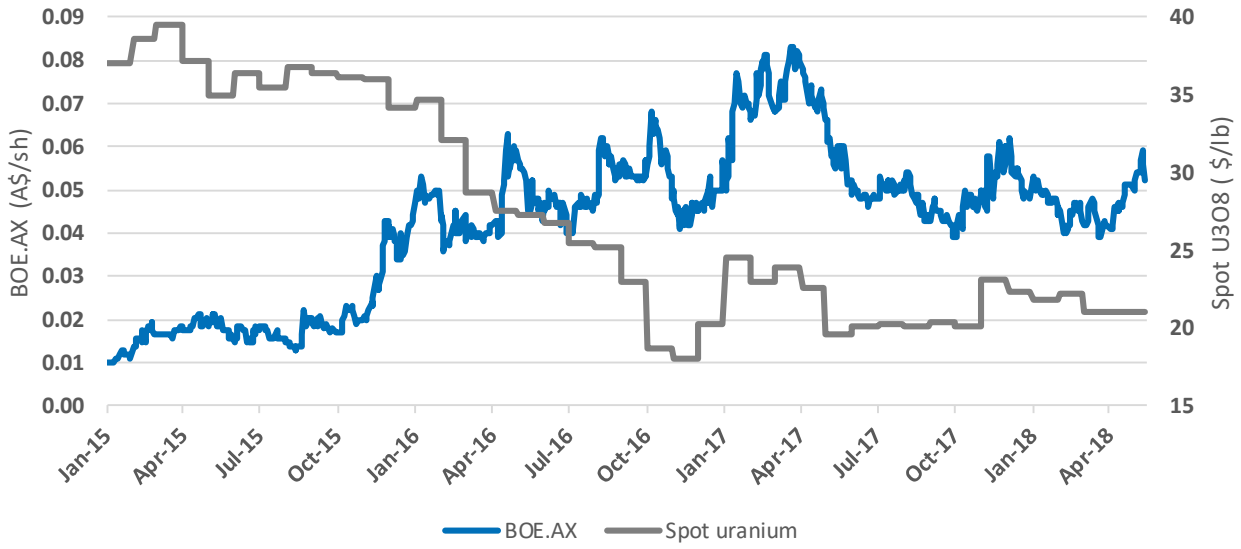
Boss commenced work at Honeymoon in short order, with a series of resource upgrades and drilling, culminating in the publication of a PFS in May 2017. After the PFS, the most significant development was the successful completion of Field Leach Trials at Honeymoon which confirmed the assumptions made in the PFS and exceeded historical results.

Figure 3 - BOE's share price timeline and key events



Source: Shard Capital

Figure 4 - BOE.AX vs monthly spot uranium prices ($/lb)



Source: Shard Capital

$8m capital raise to advance DFS

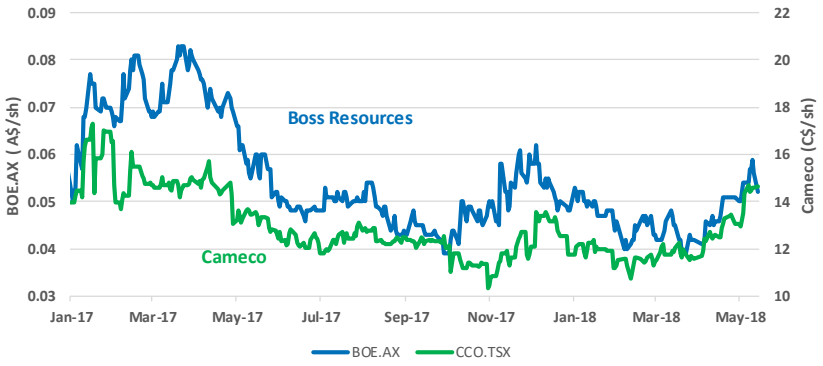
In late March 2018, Boss completed a $8m share placement at A$0.04 per share (2.5% premium to last closing price) resulting in the issue of 200m shares. The net proceeds from the raise will be used to advance a DFS (definitive feasibility study) for the Honeymoon uranium project, fund further mineral exploration activities and for general working capital. Notably, several new institutional investors participated in the raise, including Tribeca Investment Partners (75m shares, 4.77% interest post-raise).

Project finance partner. Boss also appointed Tribeca Investment Partners to arrange Project Finance Facilities of up to US$65m to assist in funding the development and restart of Honeymoon. As part of the mandate, Tribeca has a right to participate in future debt or equity transactions for 6 months after the term of the mandate.

Share Price Comparison Charts

Despite Boss's honeymoon project being in the development stage, the company's share price has followed a similar trajectory to major uranium producers such as Cameco. Thus, in addition to re-ratings on the back of funding and development milestones, we view Boss as another way to gain exposure to uranium price leverage, albeit with potentially higher volatility.

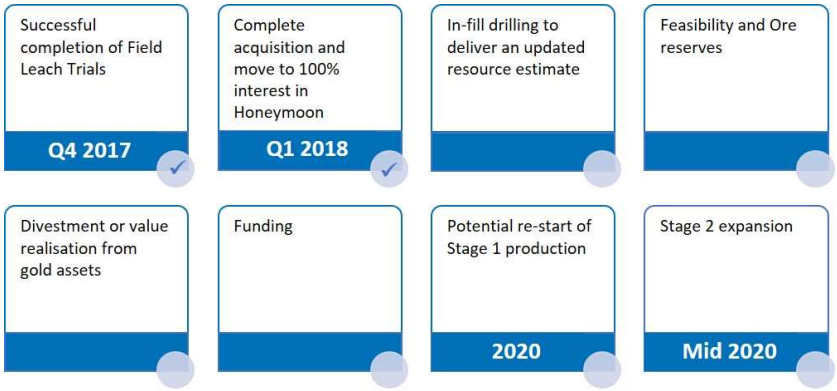
Figure 5 - BOE.AX vs Cameco (COO.TSX)



Source: Shard Capital

Potential timeline and key milestones

Figure 6 - Indicative timeline



Source: Shard Capital estimates, Boss

Valuation

Our near-term target price for Boss Resources is A¢10.5/sh fully-diluted. This is based on a sum-of-the-parts NAV valuation driven by our NPV$^{8\%}$ of US$257m (A$325m) for the Honeymoon project and appropriate adjustments. We risk our NPV at 0.4x multiple to derive our 10.5¢ target price. This implies that Boss is trading (based on current share price 5.6¢) at an attractive 0.54x P/NAV discount.

Figure 7 - Indicative NAV valuation - Shard Capital estimates

Unrisked Project NPV	Discount rate	IRR (%)	NPV (US$m)	A$m	A$/sh
Honeymoon (100%)	8%	35%	257	325	0.20
Risked NAV valuation	**NAV x**		**NPV (US$m)**	**A$m**	**A$/sh**
Honeymoon	**0.4x**		**103**	**130**	**0.08**
Exploration				21	0.01
Gold assets				13	0.01
Cash				7.5	0.00
Cash from options exercise				1.0	0.00
Debt (promissary notes)				-9	-0.01
Provisions				-8	0.00
Tax loss (corp level)				16	0.01
Total				**170.86**	**0.103**
				P/NAV	**0.54**
Shares in issue (inc. Wattle acquisition)					1574.4
Options					55.5
Performance rights (ex- nickel milestones)					24
FD share captial					**1653.9**

Source: Shard Capital estimates

Base case NPV assumptions

Our base case unrisked NPV$^{8\%}$ of the Honeymoon project (100% basis) is US$257m (A$325m) or A$0.20/sh. Our valuation is driven by a DCF model of the operation, with parameters based heavily on the May 2017 PFS. Our DCF includes the following assumptions:

- Nominal construction start date of early 2019, leading to commissioning in early 2020 and ramp up from 2020 onwards. Clearly with funding for the initial re-start ($10m) unlikely to be too problematic in our view, the timeline depends more on the prevailing uranium price.
- Staged expansion as per the PFS; 1) 0.88Mlbs, 2.) 2Mlbs and 3.) 3.2Mlbs U_3O_8 reaching peak capacity start-up + 7 years. Capex based on the PFS schedule ($10m, $58m and $78m), plus c.$10m p.a sustaining capex.
- 13-year LOM. We assume that the Goulds Dam satellite deposit is developed, as we see the future conversion of inferred resources as the more likely scenario rather than the limited 7-year PFS mine life.
- Operating costs. We assume C1 LOM average cash operating costs of $17.50/lb and LOM AISC of $25/lb.
- Uranium price. We model a phased recovery in the uranium price in $5/lb increments up to a long-term price of $55/lb from 2021. We believe this is conservative based on the outlook for the uranium industry, and similar to the incentive price to stimulate new supply. We assume a flat US:AUD exchange rate of 0.75.

Risked NAV sum-of-the-parts

To derive our nominal valuation of Boss Resources and target price we apply a risk multiple to our NPV, in addition to other adjustments for our sum-of-the-parts valuation. We see significant scope for value accretion if the company successfully meets development targets and on the back of any increase in the uranium price.

We generally value advanced exploration and development companies in the range of 0.2-1.0x NAV, in line with industry averages. We believe that Boss deserves to trade in the middle of this range as a junior company with a robust production ready project with a short re-start timeline, attractive economics, significant growth potential, and one the highest grade, lowest cost uranium development projects globally. If the uranium price recovers as we predict, Honeymoon should be the first cab off the rank. However, given the significant uncertainty around when supportive uranium prices might return, we use a lower risk multiple of 0.4x to account for this timeline risk, along with standard risks surrounding financing and project execution.

Our risked NPV$^{8\%}$ for Honeymoon at 0.4x NAV is US$103 (A$130m) or A$0.08/sh. We assume fully diluted share capital of 1,653m shares, which is based on 1,574m shares currently in issue, (includes the 300m issue of shares from the Wattle Mining acquisition completed in March and 200m shares from the recent $8m capital raise). We adjust for options and performance rights for a fully diluted figure but exclude any dilution from financing given the uncertainty over when the project will be developed the financing mechanism. The pre-financing basis of our valuation is compensated for by our risk multiple.

We add in a $21m nominal value for exploration, based on the lower end (42Mlbs) of Boss's exploration target range (42-100Mlbs) and a highly conservative discounted resource multiple of $0.50/lb.

Similarly, we incorporate a nominal value of $12.5m for the company's 49% interest in the Burkina Faso gold JV with Teranga based purely on pro-rata milestone payments for Teranga to gain an additional 10% interest. We stress that although Boss is considering a possible divestment of these assets, the company will likely retain significant upside exposure, and we rate the prospectivity of gold assets highly. Finally, we adjust for cash, debt, provisions, and tax losses the corporate level. Tax losses at the project level are included in our DCF tax calculations.

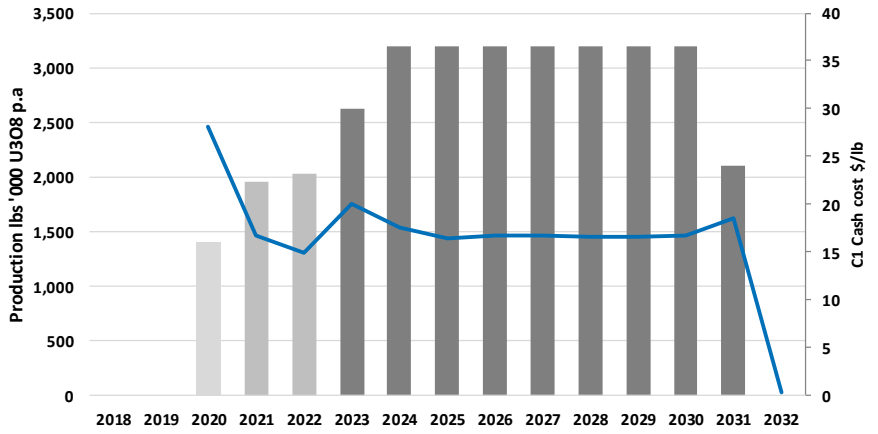
Upside

We see significant upside to our current valuation. If we see a sustainable recovery in uranium prices we would expect a material reduction in our risk discount. Our unrisked NPV for Honeymoon is A$0.20/sh, and although this remains a pre-financing basis, we see numerous catalysts to drive the company's share price including making good on exploration targets, higher uranium tenors and of course the impact of much higher uranium prices.

Project re-start remains a waiting game based on the uranium price. Although all the fundamentals point towards a major resurgence in prices as we emerge from the likely bottom of the current cycle, it is difficult to call when this may happen. Either way, Honeymoon's position at the bottom of the cost curve should ensure significant leverage to higher margins once the uranium price starts to run. Our $55/lb long-term price assumption is conservative compared to current industry consensus. Reference the sensitivity section for upside to prices.

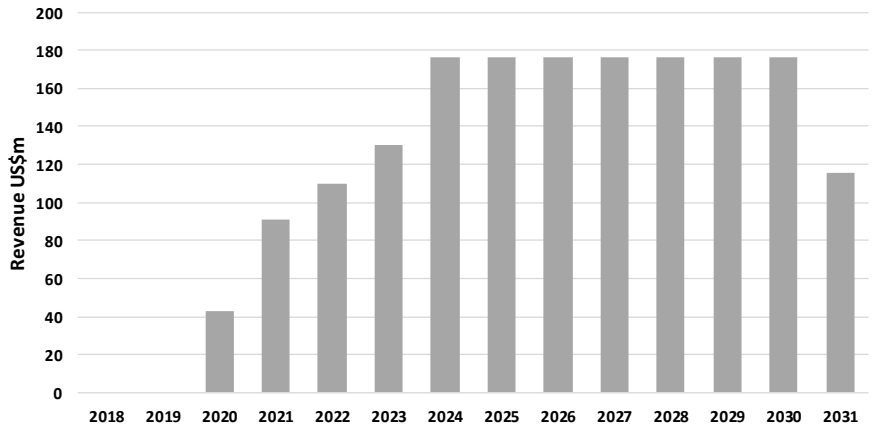
Shard Capital – indicative valuation outcomes

Figure 8 - Production ('000lbs U_3O_8) and C1 cash costs ($/lb)



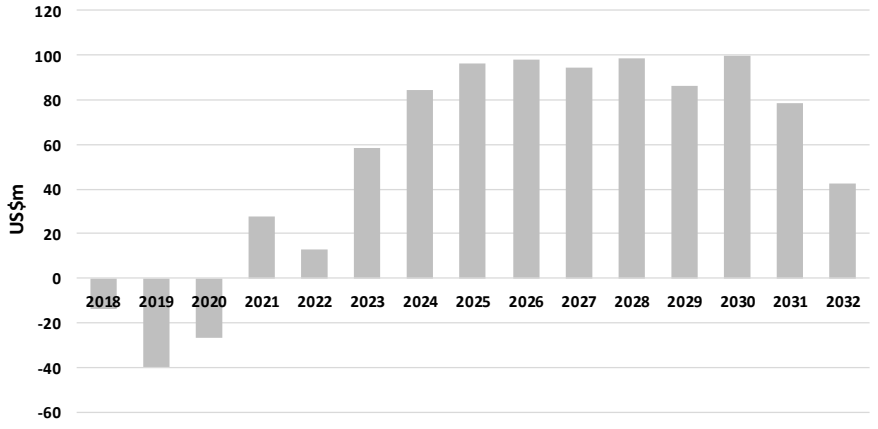
Source: Shard Capital estimates

Figure 9 - Annual revenue (US$m) at LT $55/lb U_3O_8 - Shard Capital estimates



Source: Shard Capital estimates

Figure 10 - Annual net cashflow (US$m) - Shard Capital estimates



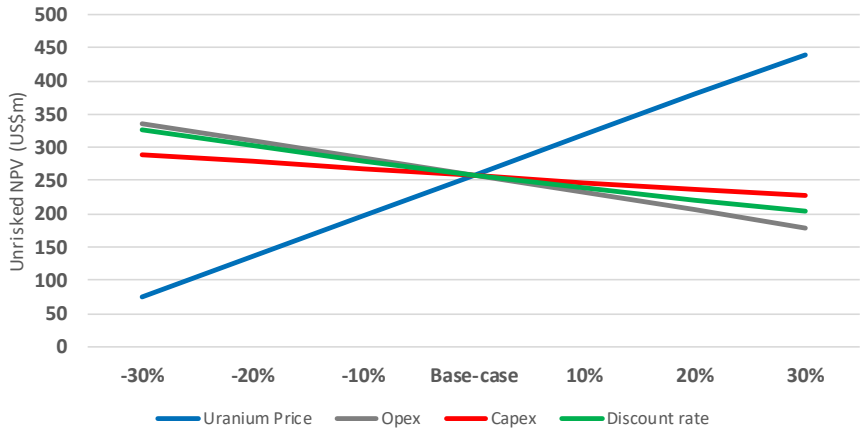
Source: Shard Capital estimates

Sensitivity Analysis

Sensitivity analysis on our unrisked Honeymoon NPV indicates that the company shows extremely strong uranium leverage and represents a compelling way to play a potential rebound in the uranium price, in our view.

Our NAV increases by 25% for a 10% increase in the uranium price, which we deem as high sensitivity, above the industry norm. If we flex our LT uranium price forecast by +20% (i.e. to $66/lb from $55/lb), our NAV increases by 47%.

Figure 11 - Sensitivity Analysis – unrisked project NPV



Source: Shard Capital estimates

Unrisked Honeymoon NPV (US$m)		Discount rate (%)			
		5%	8%	10%	12%
Uranium Price ($/lb U_3O_8)	40.00	137	88	64	44
	45.00	207	145	113	87
	50.00	277	201	161	129
	55.00	347	**257**	210	171
	60.00	418	313	258	213
	65.00	488	368	307	256
	70.00	558	424	355	298
	75.00	628	480	404	340
	80.00	698	536	452	382
	85.00	768	592	500	424
	90.00	838	648	549	467
	95.00	908	703	597	509

Unrisked Honeymoon NPV (A$/sh)		Discount rate (%)			
		5%	8%	10%	12%
Uranium Price ($/lb U_3O_8)	40.00	0.10	0.07	0.05	0.03
	45.00	0.16	0.11	0.09	0.07
	50.00	0.21	0.15	0.12	0.10
	55.00	0.27	**0.20**	0.16	0.13
	60.00	0.32	0.24	0.20	0.16
	65.00	0.37	0.28	0.23	0.20
	70.00	0.43	0.32	0.27	0.23
	75.00	0.48	0.37	0.31	0.26
	80.00	0.53	0.41	0.35	0.29
	85.00	0.59	0.45	0.38	0.32
	90.00	0.64	0.50	0.42	0.36
	95.00	0.69	0.54	0.46	0.39

Source: Shard Capital estimates

May 2017 PFS Outcomes

The May 2017 PFS envisaged a phased re-start and expansion of the project, with initial capex of $10m for re-start and $58m and $78m for stage 2 and 3 expansions respectively, and a LOM AISC operating cost estimate of $23.90/lb. Although the PFS was based only on a 7-year mine-life, this is purely a function of the inferred resources at the Jasons and Goulds Dam. With further in-fill drilling we have no reason to believe that these resources will not be converted to a higher confidence category and included in the mine plan.

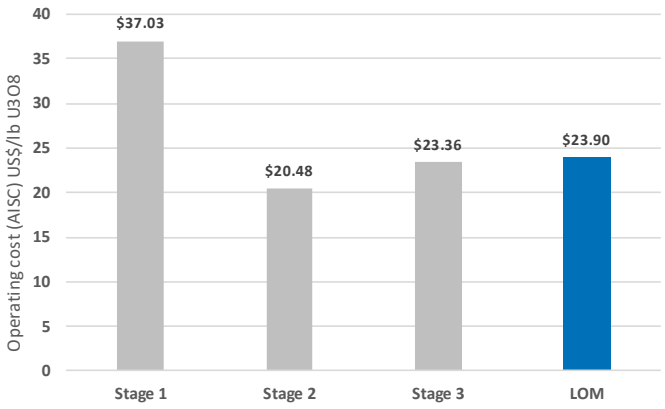
Figure 12 - PFS Outcomes

Capital Cost estimates

Capital Cost Estimates (US $m)	Stage 1 0.88 Mlbs	Stage 2 2.0 Mlbs	Stage 3 3.2 Mlbs
Direct Costs	6.05	40.83	56.25
Construction Indirects	0.56	2.38	3.43
EPCM	0.76	4.25	3.56
Spares, Inventory & Mobile Fleet	0.65	0.47	1.72
First Fill	1.19	5.14	5.95
Contingency	0.99	4.51	7.02
Total	**10.20**	**57.59**	**77.93**
		Total 1+2+3	**145.7**

PFS Operating Cost estimates

Operating Cost Estimates (US $/lb U3O8)	Stage 1 0.88 Mlbs	Stage 2 2.0 Mlbs	Stage 3 3.2 Mlbs	LOM
Wellfield	$0.46	$0.45	$1.08	$0.90
Plant	$25.60	$11.92	$11.88	$13.10
General & Admin	$5.04	$1.78	$1.17	$1.65
Marketing, Shipping & Royalties	$4.29	$4.03	$4.97	$4.65
Sustaining Capex (inc. wellfield dev)	$1.64	$2.31	$4.28	$3.60
Total	**$37.03**	**$20.48**	**$23.36**	**$23.90**

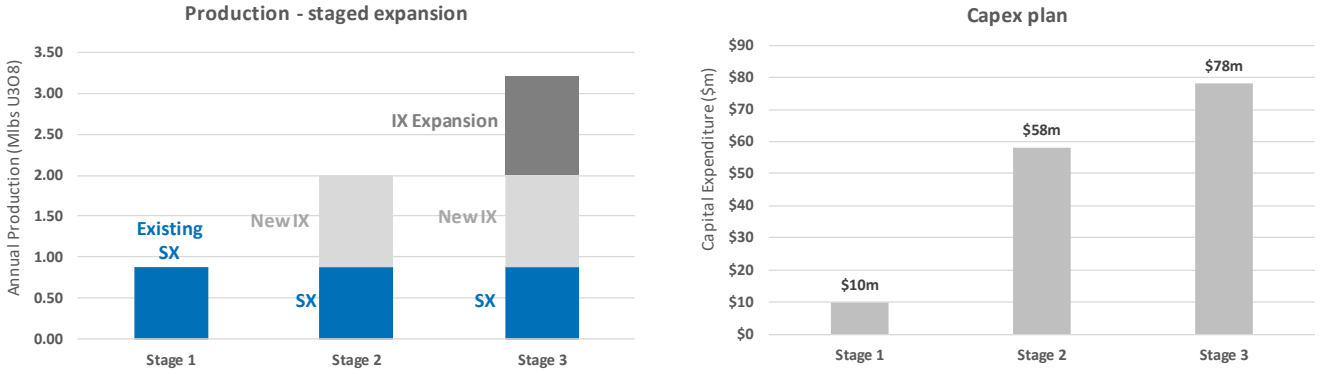


Source: Boss

PFS Production & Expansion plan

Boss's restart and expansion plan has been split into three separates stages which has a number of benefits such as providing a low-cost re-start plan with the initial $10m requirement being a more manageable sum, increasingly the likelihood of securing funding. The new ion-exchange (IX) plant to increase capacity beyond the existing plant's nameplate capacity will be undertaken once Honeymoon is in production, with free cash flow potentially available to subsides further expansion activities.

Figure 13 - Production expansion and capex plan



Source: Shard Capital

Stage 1 – restart of existing operations – 0.88 Mlbs

Stage 1 development will focus on the re-start of the existing solvent extraction (SX) plant which has a nameplate capacity of 0.88Mlbs pa. This involves recommissioning the plant but with several key low-cost modifications to rectify the processing issues encountered during the original operational period. The modifications are minor and amount to the addition of booster pumps at wellfields, a Jameson cell to remove organic matter from SX raffinate, and other small "tweaks". Stage 1 capex is budgeted at a mere **$10m**.

The initial production area will be the wellfields previously developed by Uranium One, which are entirely contained within the Indicated and Measured resource. As Production ramps up, new wellfields will be developed. Boss has also developed new well technology to precisely target the production zone and improve leaching performance.

Stage 2 – expansion to 2 Mlbs – new IX circuit

The backbone of the Stage 2 expansion to increase production to c.2Mlbs per annum is the construction of a new IX circuit which will utilise the preferred resin identified in recent testwork. The expansion will also include additional processing infrastructure required to handle the increased PLS flowrates. The capex for stage 2 is slated at **$58m** which includes infrastructure to support production from the Jasons deposit.

In addition to the new IX adsorption and elution facility, Stage 2 will require the installation of larger PLS pumps, increased drying and filtration capacity, and a new water treatment plant remove calcium and sulphate.

Stage 3 – expansion to 3.2 Mlbs

Stage 3 will focus on the ramp up of capacity from 2 Mlbs per annum to 3.2 Mlbs per annum. This is predicated on the maximum amount of uranium permitted to be exported according to the existing Federal government approval (i.e. 3.3 Mlbs per annum export licence). Boss plans to realise this increase in capacity by developing a satellite operation at the Gould's Dam deposit. This would require the construction of IX adsorption columns at Gould's Dam, with uranium-loaded resin then trucked to the Honeymoon plant. The Honeymoon plant would be modified with an additional elution column and downstream circuits to meet the increased production target.

Stage 3 will require new PLS and BLS ponds and wellfield infrastructure at Goulds Dam along with the new IX columns, and other associated infrastructure including roads and a diesel fired power station to support production from the deposit. At Honeymoon, additional elution and filtration capacity will be required, along with other minor additions to the plant footprint. Stage 3 capex is estimated at $78m.

Figure 14 - Production profile

Stage 1	Stage 2	Stage 3
0.88 Mlbs	2 Mlbs	3.2 Mlbs
Resource: Honeymoon	Resource: Honeymoon + East Kalkaroo + Jasons	Resource: Honeymoon + East Kalkaroo + Jasons + Goulds Dam
% M&I Resource: 100%	% M&I Resource: 74%	% M&I Resource: 58% LOM: 68%

Source: Boss

Short timeline to production

The timeline for re-start is clearly depending on funding and the prevailing uranium price. However, the key takeaway is that Boss estimates being able to fast-track a re-start of operations in a mere 12 months based on recommissioning the existing SX circuit. The expansion to 2 Mlbs is expected to take approximately 24 months.

Figure 15 - Production profile - production from 2020 potentially

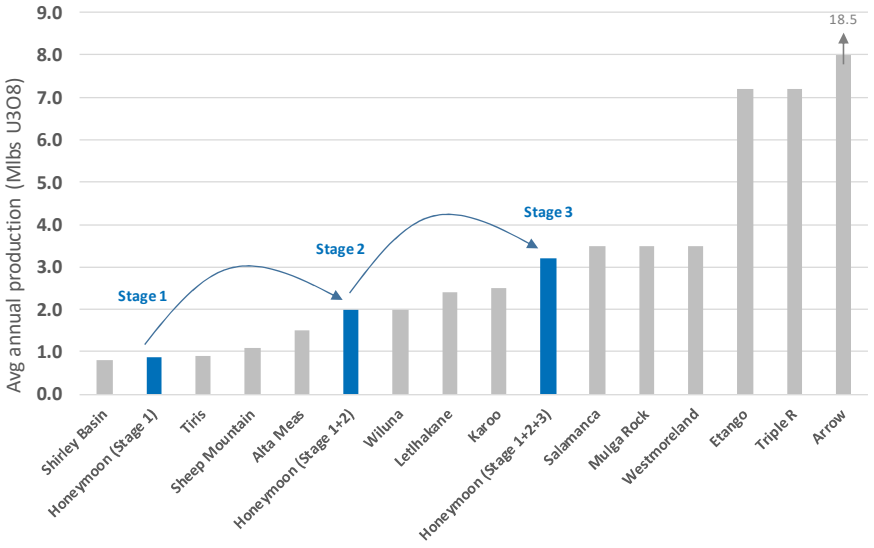
Source: Boss

Putting Honeymoon into context

Production scale

Boss's expansion strategy should see 0.88Mlbs p.a. production at re-start increase to 2Mlb and onto 3.2Mlbs through the phased addition of new IX plant infrastructure. This would position Honeymoon as one of sectors' largest producers, especially if you remove the high-capex, long lead time Athabasca projects such as Triple R (Fission) and Arrow (NexGen).

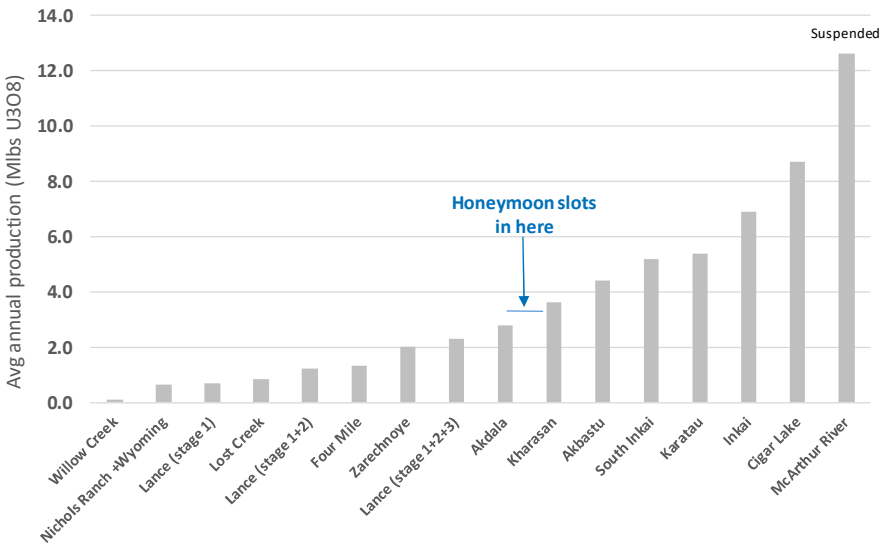
*Figure 16 - Selected uranium **developers** – average annual production (Mlbs)*



Source: Shard Capital, Company reports

Honeymoon at full production would become a mid-scale global uranium producer.

*Figure 17 - Selected uranium **producers** – average annual production (Mlbs)*

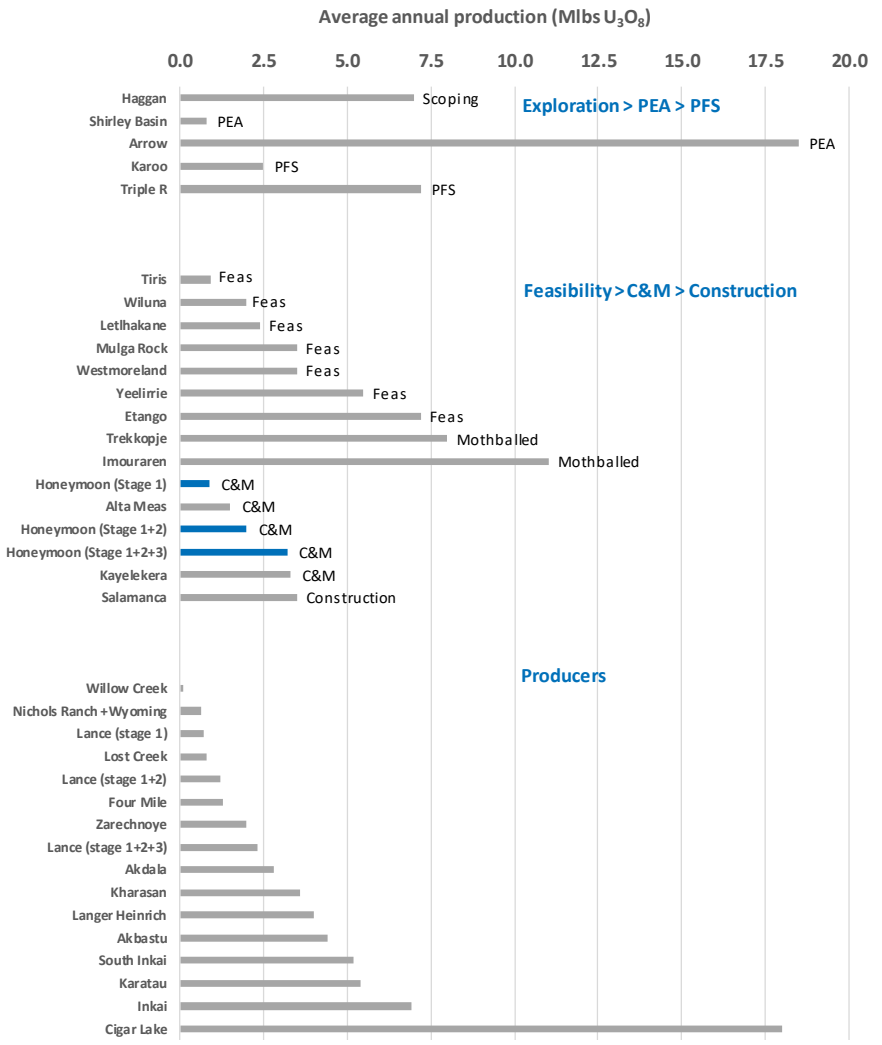


Source: Shard Capital, Company reports

Development Stage

Honeymoon is one of the most advanced uranium development projects, with the operation on care and maintenance, Boss estimates that it can resume Stage 1 production in a mere 12 months.

Figure 18 - Honeymoon development status versus peers

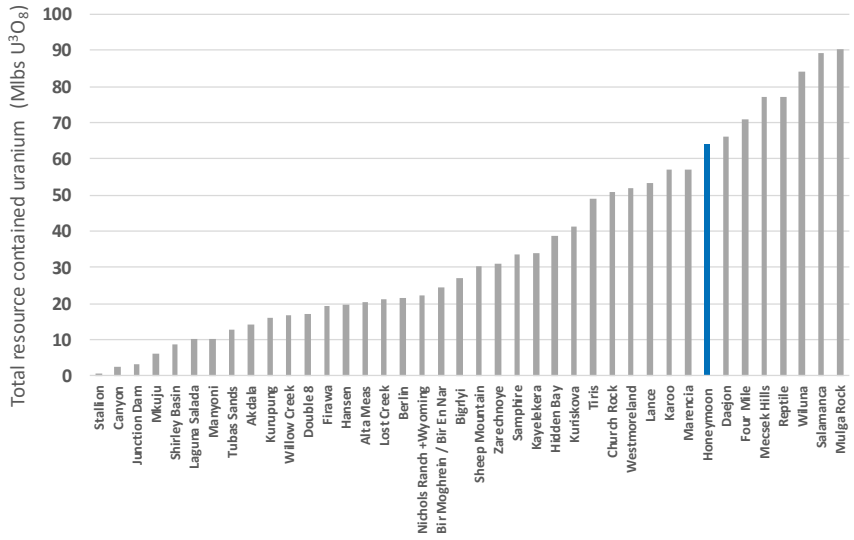


Source: Shard Capital, Company reports

Resource magnitude – contained U_3O_8

The global resource of 63.8Mlbs U_3O_8 at Honeymoon makes puts the project at the upper end of the spectrum including both developers and producing deposits. We have excluded the giant Kazakhstan ISR operations and some of the extremely large Athabasca projects (e.g. Triple R 140Mlbs, Arrow 301Mlbs, Cigar Lake 216Mlbs) in the chart below, using a cut-off of sub 100Mlbs, to provide more clarity. Note that Boss has a combined exploration target across the tenement package equating to a potential target endowment of between 42Mlbs and 100Mlbs of additional U_3O_8.

Figure 19 - Resource (total contained U_3O_8) Uranium universe – producers and developers < 100Mlbs

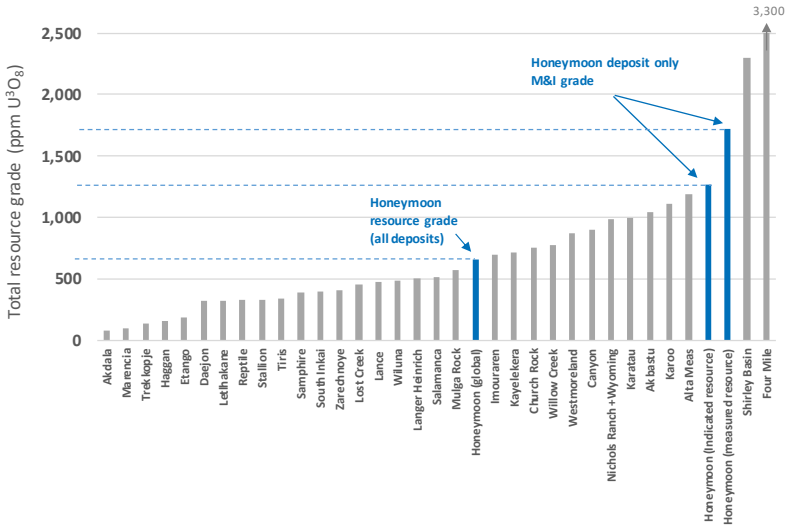


Source: Shard Capital, Company reports

Resource grade – ppm U_3O_8

Honeymoon has one of the highest-grade resources in the sector, especially the M&I categories at Honeymoon where initial production will be sourced from.

Figure 20 - Resource grade (ppm U_3O_8) Uranium

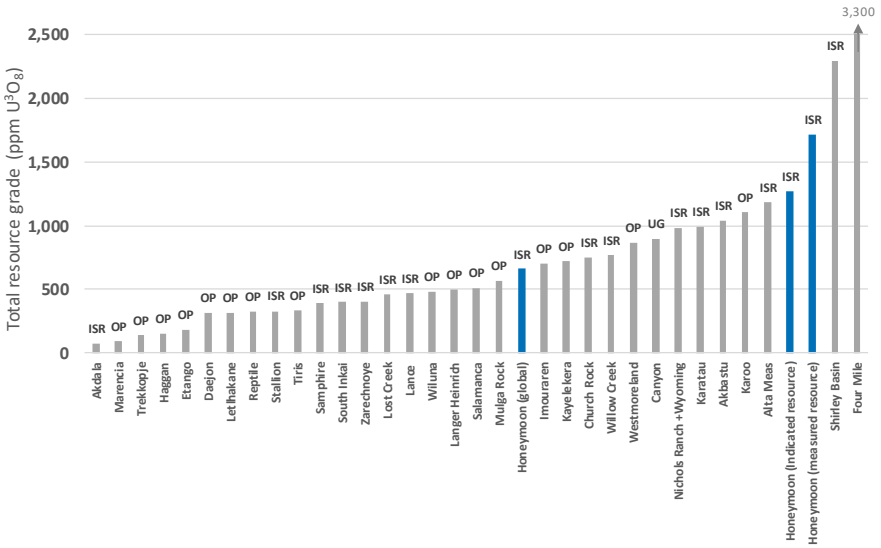


Source: Shard Capital, Company reports

Resource grade – ppm U_3O_8 vs project type

Honeymoon is one of the highest grade ISR operations globally. We calculate an average grade of 535ppm for our uranium universe, versus Honeymoon's global grade of 660ppm. Honeymoon's measured resource grade is 1,720ppm and indicated resource grade is 1,270ppm.

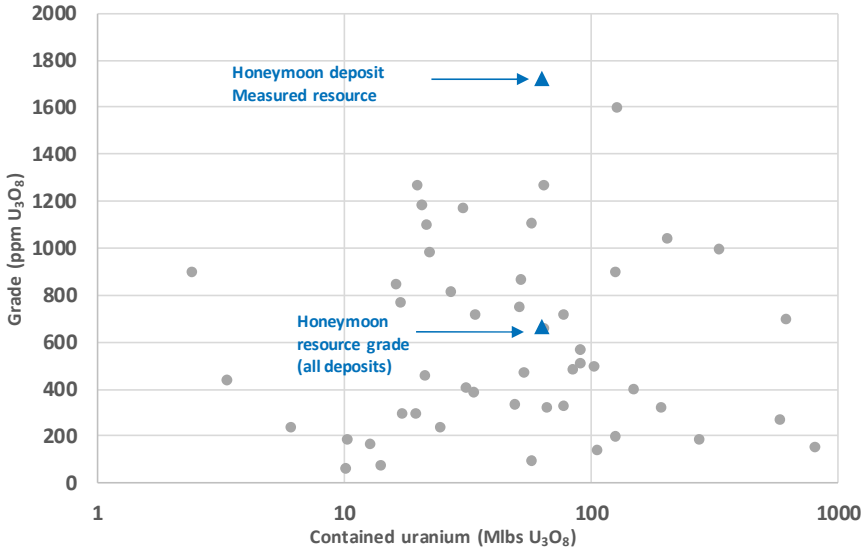
Figure 21 - Resource grade (ppm U_3O_8) and project type



ISR= In-situ Leach, UG= underground, OP = open pit

Source: Shard Capital, Company reports

Figure 22 - Resource grade-tonnage plot – X axis logarithmic scale

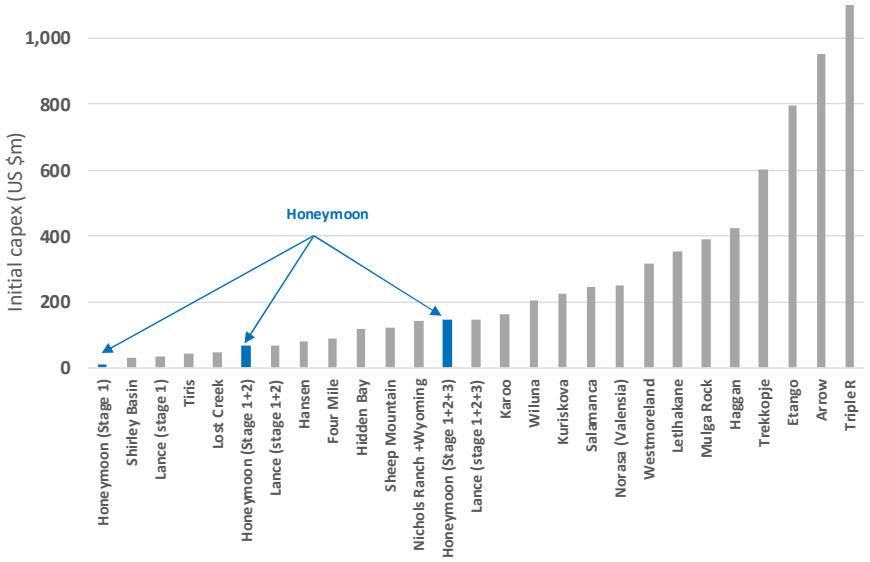


Source: Shard Capital, Company reports

Initial capital cost

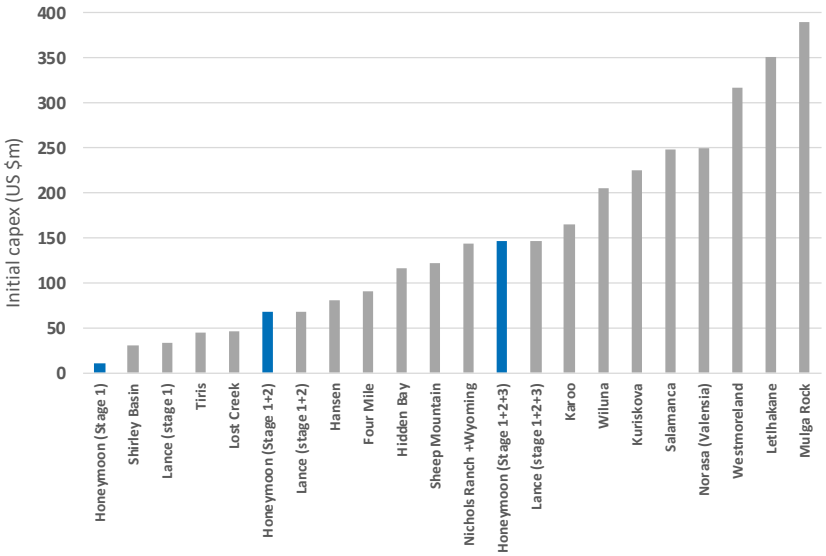
Total capex in dollar terms is also an important metric as this evidently feeds through to ease of financing in addition to affecting the NPV and payback of a project. Honeymoon is defined by a very low ($10m) initial capex for restart but note that even the cumulative Stage 1+2+3 capex is very reasonable compared to industry averages. The new discoveries in the Athabasca, although adding potential new supply to the industry pipeline are $1bn + capex projects with a lead time of c.10 years.

Figure 23 - Initial capital cost – developers and historical mine starts



Source: Shard Capital, Company reports

Figure 24 - Initial capital cost – developers and historical mine starts <$400m

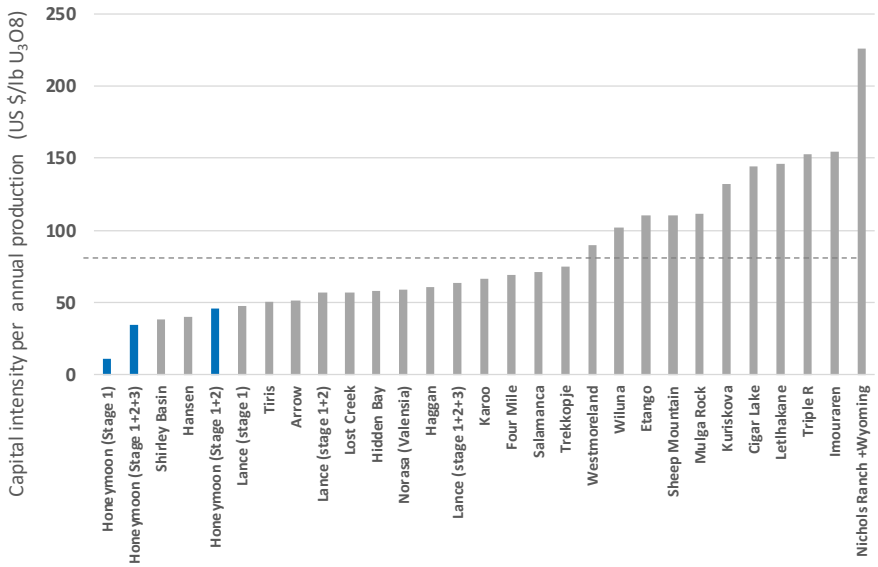


Source: Shard Capital, Company reports

Capital intensity

The standout feature of Honeymoon is the very low capital intensity as a result of the $170m in sunk costs. We calculate the capital intensity (annual production basis) for re-start Stage 1 (0.88Mlbs) is $11.4/lb of annual production, Stage 1+2 (2Mlbs) is $34/lb and Stage 1+2+3 (3.2Mlbs) is $45/lb, versus the sector average of $84/lb.

Figure 25 - Benchmarking capital intensity

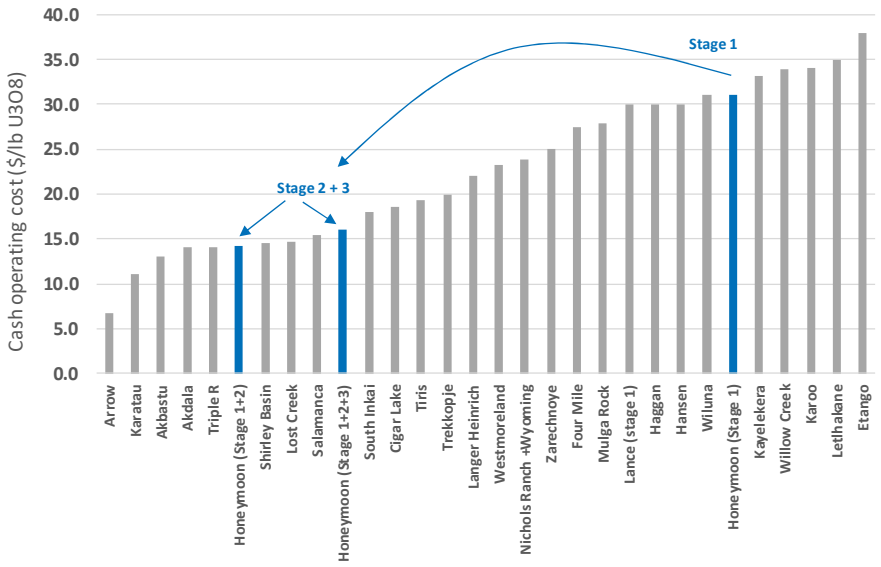


Source: Shard Capital, Company reports

Operating costs

The Honeymoon May 2017 PFS indicated extremely low cash costs of c.$16/lb and AISC of $24/lb over LOM. This would position honeymoon as one of the lowest cost producers globally. The anticipated cost reduction as a result of the Stage 2 and 3 expansion is significant.

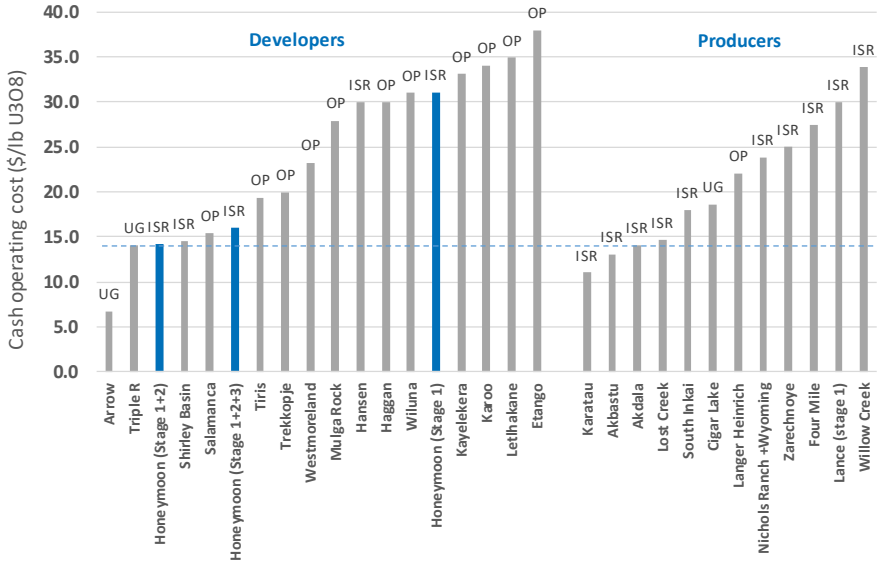
Figure 26 - Cash operating cost (US$/lb U_3O_8) - Uranium universe



C1 costs, or proxy to C1 as reported

Source: Shard Capital, Company reports

Figure 27 - Cash operating cost (US$/lb U_3O_8) Developers vs select producers



C1 costs, or proxy to C1 as reported

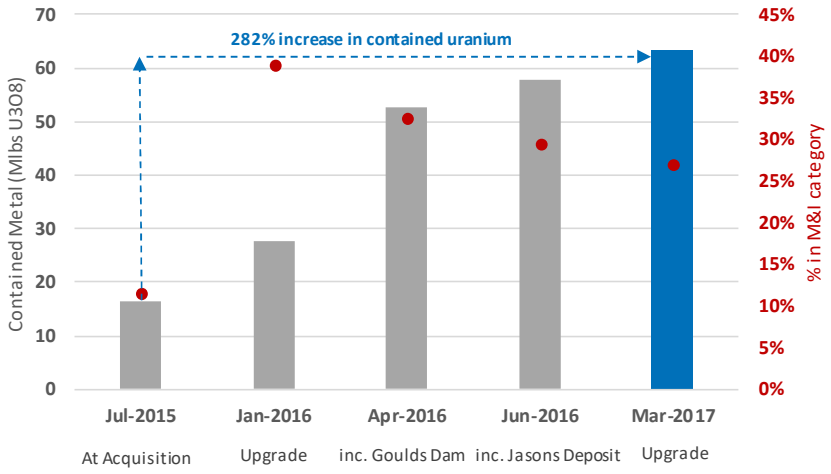
Source: Shard Capital, Company reports

A track record of resource growth

Boss has an excellent track record of resource growth since acquiring the project in December 2015. The company has grown the overall resource inventory from 16.57Mlbs at acquisition to the current global resource of 63.3Mlbs U_3O_8. Although initially the first resource upgrade was partially due to the use of a lower (and industry standard) cut-off grade, the majority of the resource growth has been as a result of deposit addition and growth.

Boss has gained a better understanding of the geology at Honeymoon than at any other time in the project's history. Boss inherited a huge database of drilling and other data, which has been supplemented with the company's own infill and extensional drilling programmes. This, and the use of advanced 3D geostatistical modelling has resulted in a much clearer understanding of the continuity of mineralisation and volume. Major resource additions were also achieved by reporting maiden resource estimates for the Goulds Dam and Jasons Deposits.

Figure 28 - Boss's track record of resource growth



Source: Boss, Shard Capital

South Australia – a good destination

Honeymoon's location in South Australia gives Boss a significant advantage over other global development projects. In addition to the project already being fully-permitted for a production re-start the jurisdiction is highly supportive of uranium mining and exports. According to Boss, The South Australian Government has made it clear that it openly and actively supports exploration for uranium. Despite having 23% of the world's uranium resources, South Australia only produces around 10% of the world's uranium, indicating that there is significant potential for long term production, expansion and demonstrated geology with high potential for further discoveries.

The state government's royalty rates are competitively low (2% for new mines, and 5% after the first 5 years), and the state boasts over 30 years of proven safe uranium handling and transportation through the Australian approved uranium export facility of Port Adelaide. There have been over 10,000 shipments of uranium from South Australia to date, with no effects to the public or the environment.

Internationally viewed as a supply destination of choice, South Australia exports to the United States, Japan, China, South Korea, Taiwan, Canada, France, Germany, Sweden, Belgium and potentially India and the United Arab Emirates.

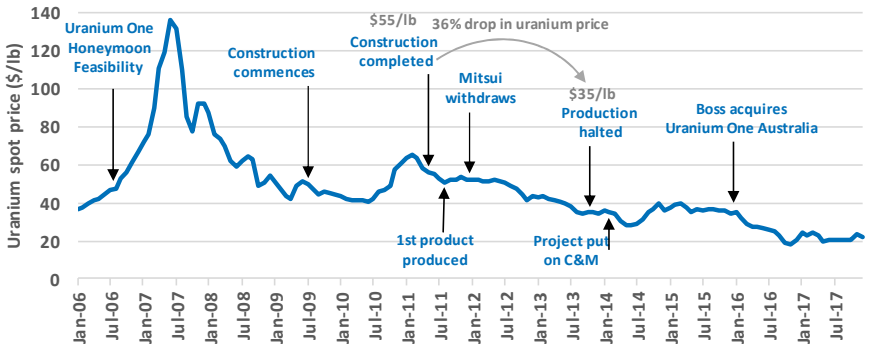
Why did Uranium One close down Honeymoon?

Uranium Prices.

A low uranium price environment was clearly one of the factors in play. The spot uranium price fell 36% from $55/lb at the end of construction to $35/lb when production was halted in late 2013. In combination with low production levels resulting in higher than anticipated operating costs, the low uranium price presented an additional challenge for Uranium One.

Uranium One also had some legacy sales contracts for Honeymoon with unfavourable terms (amounting to a liability of c.$15m in 2013). With the withdrawal of Mitsui, Uranium One accounted for these contracts at their realisable values and used production from Honeymoon to deliver into these contracts.

Figure 29 - Uranium price history vs Honeymoon milestones



Source: Shard Capital

Production scale.

In the grand scheme of things, production from Honeymoon represented only a small proportion of Uranium One's total production. In 2013, the year that Honeymoon was put on care and maintenance, the mine produced a mere 246,000lbs of uranium, or 1.8% of the group's total attributable production of 13.2Mlbs. Even at full tilt nameplate capacity of 880,000lbs, Honeymoon only of represented 6.3% of total production.

Cost Profile.

At the time, 91% of Uranium One's production was contributed by the company's low-cost ISR uranium operations in Kazakhstan. Uranium One's operating cost outlook for Honeymoon was $47/lb and $37/lb in 2012 and 2013 respectively. This compared to the group's average operating cost across all operations of $16/lb during the same period. In comparison to the scale and low operating costs of the company's Kazakhstan operations, Honeymoon was never going to be the Uranium One's primary focus, in our view.

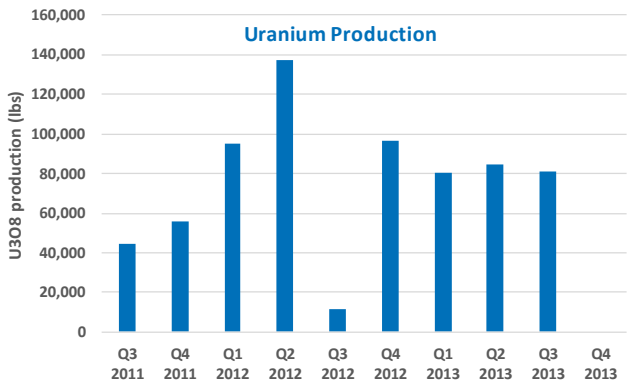
Uranium One failed to meet name-plate production

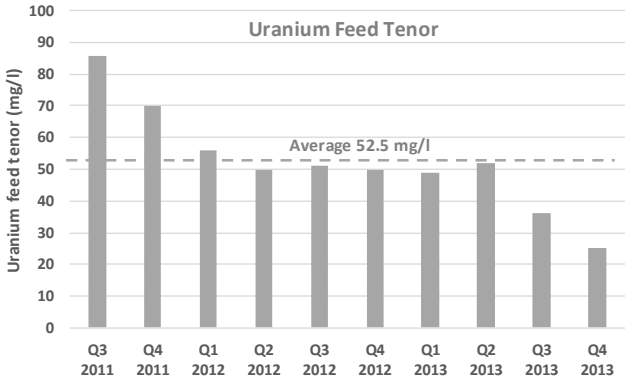
Despite the other challenges, the main reason that Uranium One stopped production and put the mine on care and maintenance was that the project never reached design capacity of 0.88Mlbs per annum. Boss identified that the existing plant was constrained by volume with production rates (and therefore operating costs) driven by the uranium tenor in the feed solution to the plant.

The crux of the issue was the low uranium tenor in the PLS. The graphs below illustrate the quarterly production and uranium tenor during the short life of the operation. Annual production during commissioning from Q3 2011 was 100,000lbs in 2011, 340,200lbs in 2012 and 246,000lbs in 2013. The highest quarter of production was in Q2 2012 at 137,300lbs, but even this amounts only to 0.55Mlbs on an annualised basis.

The uranium tenor averaged only 52.5mg/l during the time the plant operated, well below the plant design of 78mg/l. According to Boss's analysis of the historical data, the reason for the low tenor was due to: wellfield design and well construction / installation; gypsum precipitation; and leaching chemistry. Primarily, it was the inability to efficiently recover dissolved uranium from well field lixiviate.

Figure 30 - Uranium One's historical operating performance at Honeymoon





Source: Uranium One, Shard Capital

Field leach trials a major break-through

In June 2017, Boss completed the planning and design of a Field Leach Trial (FLT) at the Honeymoon project. The FLT is the first major component of the DFS and comprised a wellfield leach trial and an ion-exchange (IX) pilot plant. The FLT was completed in November on time and within budget, and was a resounding success, even exceeding the company's expectations. This represents the critical technical validation step in demonstrating that Boss has the potential to improve significantly on the operating performance achieved by Uranium One.

Aims of the FLT

The FLT was designed to optimise factors such as the wellfield design, but primarily to ensure that re-starting Honeymoon and running a sustainable operation is a viable option. The successful completion of the FLT is particularly important given that Uranium One struggled to deliver the required uranium tenor

Field Leach Trial - aims and deliverables
Confirm wellfield pattern and design
Detailed understanding of geological conditions
Understanding leach kinetics and their impact on historical recoveries
Validate optimal leaching conditions (pH, Redox, Fe levels)
Verify ion exchange performance on real leach liquor
Identify preferred resin for ion-exchange
Confirm pregnant liquor tenors and production rates;
Generate information for improved design and cost estimates
Provide necessary plant and wellfield technical data for the DFS
Control gypsum precipitation within the orebody and screens/pipes

Figure 31 - Field Leach Trials - photos

Source: Shard Capital

Use of Ion-exchange validated

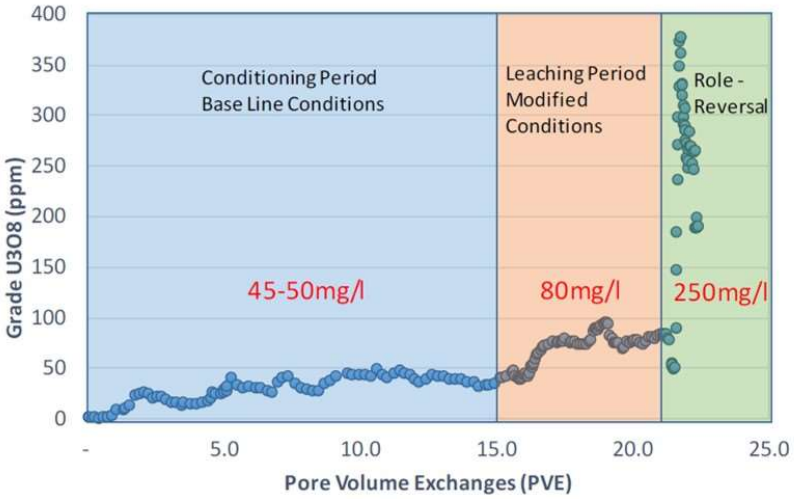
Boss's PFS (May 2017) envisages that the Stage 2 development of the project to increase production to 2Mlbs will involve the construction of a new ion-exchange (IX) circuit. Recall that that previous operation, and Boss's Stage 1 development utilise the existing SX processing plant. Thus, the FLT was designed in conjunction with an IX pilot plant to verify the use of IX technology in conjunction with real solutions generated from the honeymoon resource.

The IX pilot plant performed exceptionally well, demonstrating that the process is suitable for use at Honeymoon, and providing key design data that will be used in the Definitive Feasibility Study to more accurately design and cost the ion exchange process. The testwork also identified a preferred IX resin which appears to be highly selective for uranium recovery which has positive implications for commercial development of the project. The preferred resin has a much higher uranium loading capacity versus other resins previously tested.

Historical high tenors produced in leaching

Along with the historical production record, the FLT clearly demonstrated that the uranium contained within the Honeymoon deposit can be leached. However, the compelling aspect of the leaching results was that extremely high uranium tenors were reported from the FLT.

Figure 32 - Uranium tenor achieved in the FLT



Source: Boss

An early win. Initially, the FLT quickly started returning average feed tenors of 45-55mg/l U_3O_8 in line with the assumptions in the PFS. These tenors were reported from what Boss terms the conditioning period, which represents the time required to stabilise the pH and the oxidation-reduction potential, prior to the leaching phase.

Modified chemistry boosts tenor. Once the FLT was underway Boss modified the injection solution chemistry to reflect the improved process being considered by Boss (i.e. higher ferric tenors and lower pH). The results from the modification were immediately seen with the uranium tenors in the PLS increasing rapidly in the both the low-grade and high-grade wellfield patterns. The FLT wellfield continuously produced PLS in the 75-85mg/l range (see graph above).

Maximum Tenors explored. As Boss testwork continued, the FLT progressed to role-reversal / push-pull test for one week to determine the maximum possible tenor that can be achieved. The role reversal strategy involves switching the extractor and injector wells, thereby enabling the recovery of uranium from a "fully oxidised" zone and hence an indication of maximum tenor. Results were immediate with the uranium tenor in the PLS increasing to a peak of 377mg/l, far surpassing all previously known leaching results at Honeymoon, before settling in ranges 200-250mg/l U_3O_8.

Why are these results so impressive?

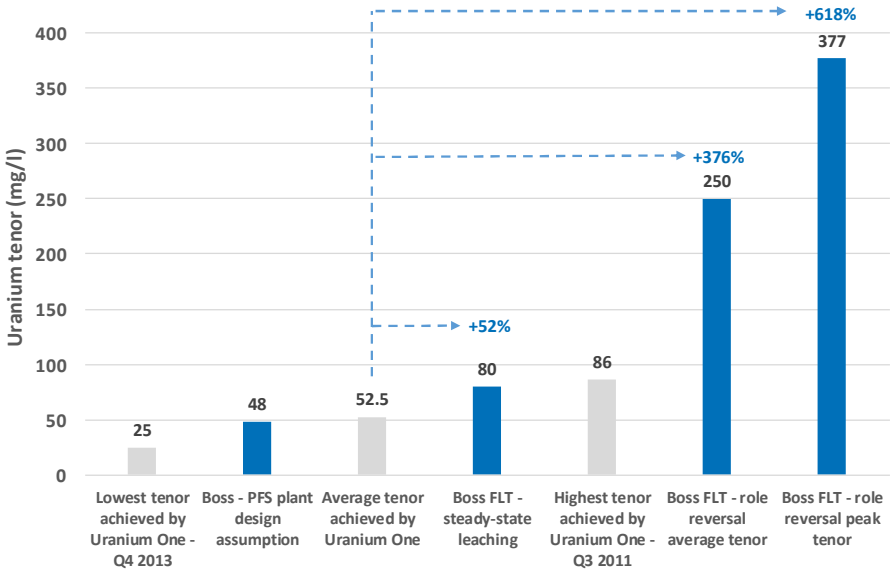
Steady-state tenors of 75-85mg/l from the FLT exceeded Boss's expectations. The existing SX plant was designed by Uranium One for a feed tenor of 75mg/l to meet the 0.88Mlbs per annum production target. In actual fact, Uranium One only achieved an average tenor of 52.5mg/l during the limited two-year commissioning and production phase.

Boss Resources' PFS determined that an average LOM feed grade of 69mg/l U_3O_8 was achievable but taking a conservative view it was agreed that the new process be designed to meet the required production at a tenor of only 48mg/l U_3O_8.

Achieving these higher grades would benefit the project by reducing equipment size (i.e. lower capital cost) and increasing efficiency (operating cost reduction) or allowing higher production rates for the same capital spend.

The results suggest that Boss may be able to achieve and sustain much higher production rates than managed by Uranium One. The use of high-ferric, low pH solutions is a key development that was not tested by Uranium One.

Figure 33 - Uranium tenor achieved in the FLT



Source: Boss

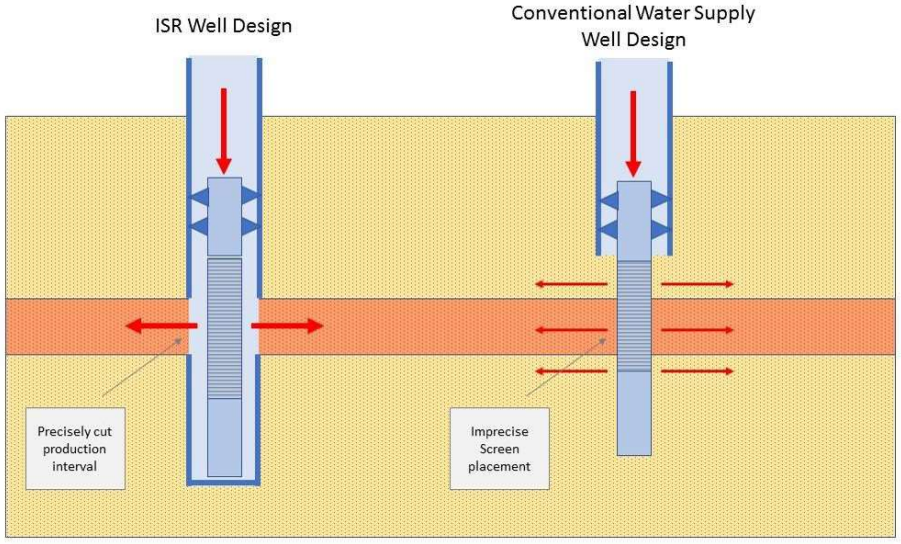
New well design to improve leaching performance

Boss's proposed wellfield plan incorporates well designs that the company believes will improve leaching performance compared to the previous ISR operating conditions under Uranium One.

The wells have been designed with a very precise production zone that directs the injected leach solution into contact with the target ore horizons. The opening between the well and the ore horizon is precisely cut (under-reamed) out of a sealed PVC bore casing. This compares to the system used during the Uranium One era when the wells were constructed with standard water supply well technology and did not accurately target the mineralised horizons.

This new well design proposed by Boss is standard ISR technology in the uranium industry, i.e. it is not a high-risk new technology. Boss believe that it will provide a significant enhancement over the well designs implemented in the previous ISR operating conditions at Wellfields A, B and C at Honeymoon, as indicated in the figure below.

Figure 34 - New well design (LHS) vs previous operating wells at Honeymoon



Source: Boss

The plant is in excellent condition

We visited the honeymoon project in January 2018. The striking element about the project is the substantial infrastructure on site. Although this is evident from the company's presentations and press releases, it really does have to be seen to be believed.

The plant has been on care and maintenance since Uranium One closed the operation at the end of 2013. However, the two takeaways are: 1.) Uranium One built the "Rolls Royce" of uranium mines, one of the benefits of acquiring a project from one of the world's biggest uranium producers. 2.) the plant and associated infrastructure is still in exceptional condition. As the project is situated in an arid climate, there was virtually not a spot of rust to be seen anywhere.

A relatively quick re-start is envisaged

Evidently, the care and maintenance programme has been top notch in our view. The plant was systematically cleaned out and shut-down in a manner such that it could be recommissioned in a relatively short period of time if needed. Boss believes that the plant can be recommissioned in a short period of time.

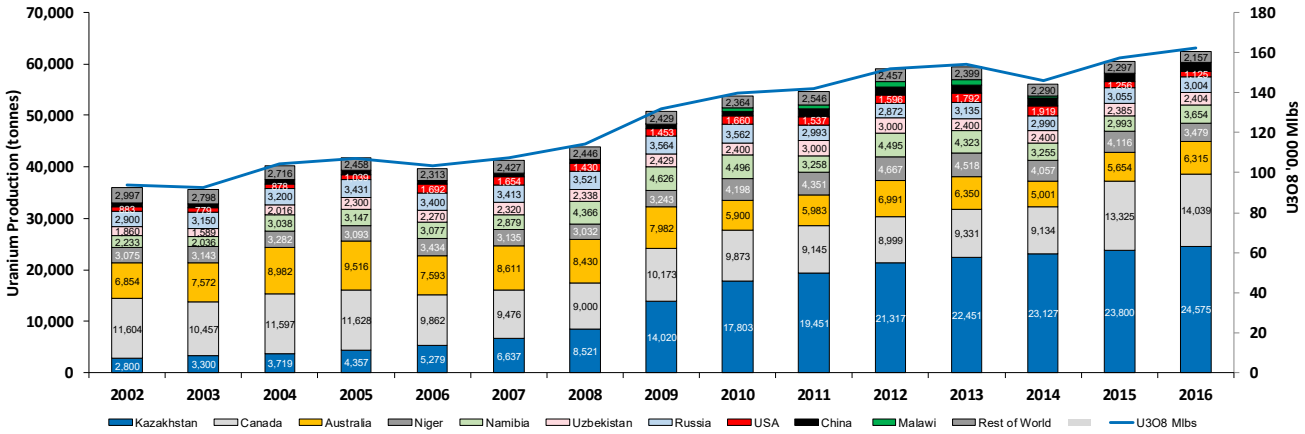
The required work to re-start operations only amounts to replacing consumable and minor mechanical parts such as bearings and seals etc. This part of the process is akin to the regular schedule of maintenance in any operating mine. The second major part of the re-start process is to implement certain minor modifications to rectify identified operational issues that hampered commissioning under Uranium One. As **the project is fully permitted** to be brought back into production, there will be no timeline drag from the onerous task of securing permits and approvals.

Figure 35 - The Honeymoon processing plant is in great condition

Source: Shard Capital

Uranium chart book – market update

Figure 36 - Primary Uranium production by country – 2002 to 2016



Source: WNA

Supply themes

- **Producer discipline emerging.** The industry has reacted, and a raft of supply cuts have been announced over the last 12-18 months. Notably cuts have been announced by the largest uranium producers – Kazatomprom (39% of global production) and Cameco (17% of global mine production). Kazatomprom's three-year production cut and Cameco's 10 months McArthur shutdown collectively amounts to over 40Mlbs of U_3O_8 taken out of the market, about 25% of global production. The cumulative producer supply cuts are more than just a gesture. They represent a major change in the supply dynamics.

- **Long-lead time.** There are very few projects that are able to come on stream quickly in the event of a sustained recovery in uranium prices. Many of the new large projects in the Canadian Athabasca are high-capex with lead times of around a decade to bring them into production.

- **Cameco (2017)**. Cameco announced in November 2017 that it would suspend production at McArthur River and the Key Lake Mill in Canada for 10 months from January 2018. McArthur is unlikely to re-start after the 10month period unless prices increase significantly. This removes an estimated 18Mlbs of U_3O_8 from the market. **Cameco 2016.** Earlier, in 2016 Cameco suspended operations at Rabbit Lake (4Mlbs p.a.), reduced operations at McArthur (~ 2Mlbs p.a) and suspended US operations (~2.5Mlbs p.a).

- **Kazatomprom (2017).** In November, Kazatomprom announced that 2017 production would be 10% less than 2016 (~ 6Mlb cut) and in January 2018 it announced a 20% reduction in planned production from 2018 to 2020 which equates to a production cut of 28Mlbs over the next three years.

- **Areva 2017**. In October 2017, Areva announced production cuts at the Somair and Cominak mines in Niger (~1Mlbs pa)

- **Paladin (2017)**. Production cuts at LHM before the company entered administration seeking to restructure and recapitalize due to its inability to meet its debt repayment. Paladin produced ~4Mlba pa.

- **Metropolis (2017)**. On the negative side, suspension of UF6 production at Honeywell's Illinois plant has liberated c.15Mlbs U_3O_8 into the market. We understand that significant portion of this has already been placed in the market, but the net-effect is likely to dampen the market in the short-term.

Demand Themes

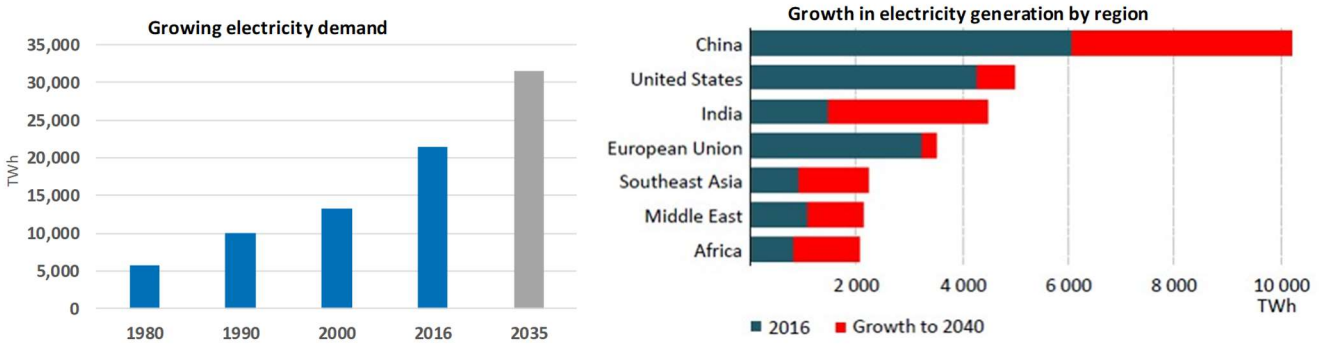
The efficiency of nuclear power remains…

- The efficiency of uranium versus fossil fuels and oil remains compelling in our view. The US Nuclear Energy Institute estimates that a single uranium fuel pellet the size of a fingertip contains as much energy as 17,000 cubic feet of natural gas, 807kg of coal or 149 gallons of oil. On a kilogram basis, uranium-235 contains two to three million times the energy equivalent of oil or coal. We believe this thesis for uranium remains relevant.

Electricity demand is growing

- India adds the equivalent of today's European Union to its electricity generation by 2040, while China adds the equivalent of today's United States according to WNA data. By 2035, global demand for electricity is expected to increase by almost 1.5x.

Figure 37 - Growing demand for electricity means more nuclear



Source: WNA

Pollution control – nuclear the best option

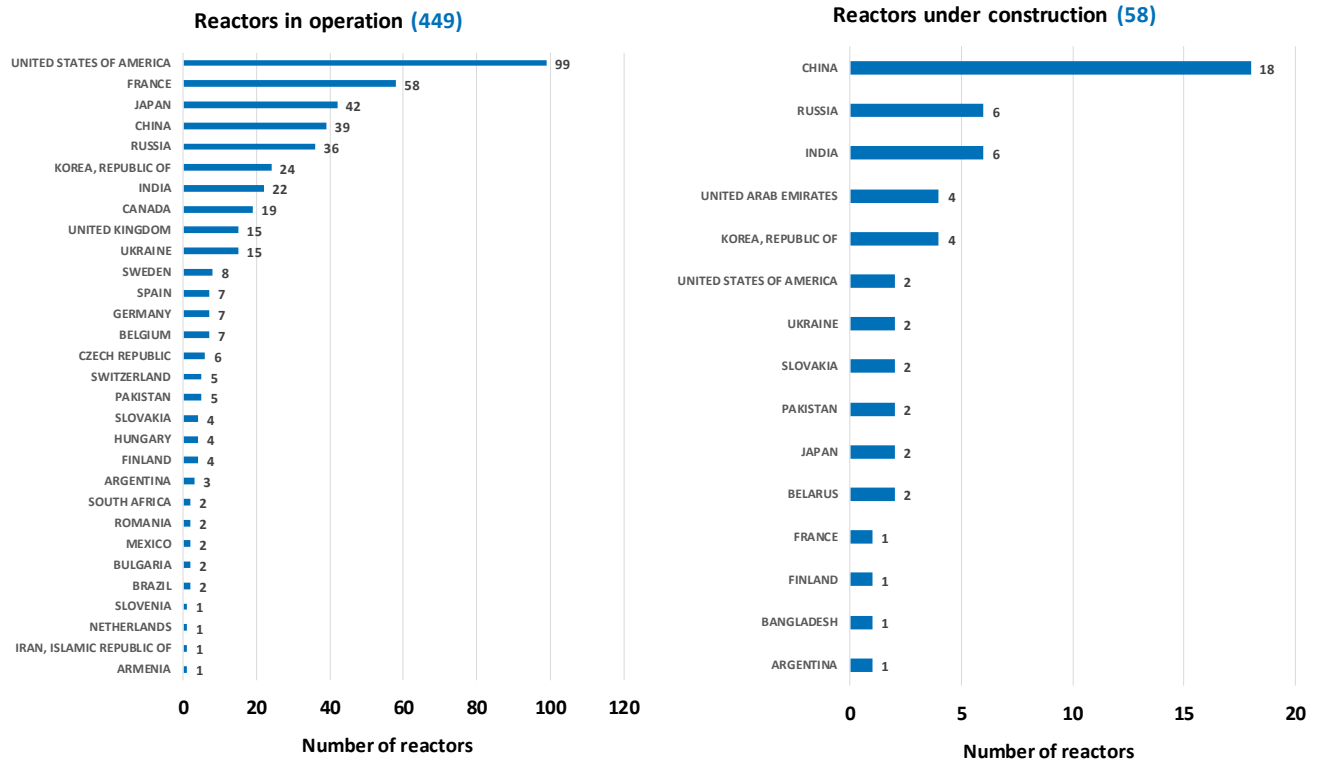
- Tightening policy surrounding air quality, pollution control and CO_2 emissions, especially in China, India and the Asian sub-continent is likely to be supportive of increased application of nuclear energy. The emphasis on the decarbonisation of electricity generation (i.e. reducing coal use) should increase the reliance on renewables and nuclear generation.

- Nuclear remains the best technology to reduce emissions, but also to provide reliable 24/7 baseload energy supply and grid stability.

Reactor build-out continues…

- **449** nuclear reactors currently in operation
- **58** nuclear reactors under construction including China (18), Russia (6), India (6) and UAE (4). The 58 reactors under construction represent a total capacity addition of approximately 60,000 MWe.
- **c.170** nuclear reactors planned, but not yet approved.
- **349** proposed reactors. A nebulous number in our view, but further demonstration of the build-out potential.
- **US.** The Trump administration in the US remains supportive of the nuclear build-out. Recent legalisation supports further capacity additions. The US remains reliant on imports for 93% of its uranium requirement (with 40% of imports sourced from Russia and Kazakhstan). The Uranium One debacle has only increased the need for security of supply.
- **China** remains the world's fastest expanding nuclear power producer. China as 18 reactors under construction, and the government has plans to build 99 reactors by 2030. Chinese imports of uranium increased by 15% in 2017 after 2 years of decline.

Figure 38 - Nuclear Reactors in operation and under construction



Source: WNA, PRIS

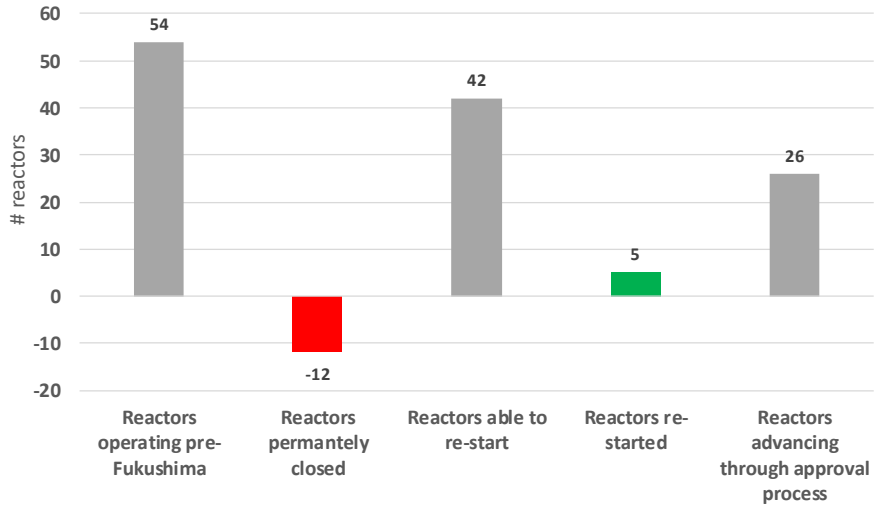
Japan – pace of restarts is slow but happening

- **Energy crunch approaching.** Japan needs to import 90% of its energy requirements and is currently not on track to meet its energy targets. Nuclear currently provides around 1.7% of Japan's electricity, down from 30% pre-Fukushima. The 2015 Japanese Energy Mix plan is based on nuclear power providing 20-22% of the country's electricity by 2030. That equates to the country needing approximately 30 reactors in operation.

- **5 reactors have restarted**: Sendai 1 (Aug 2015), Sendai 2 (Oct 2015), Takahama 3&4 (Feb 2016) and Ikata 3 (Aug 2016).

- **Re-starts have been slower than expected** due to legal and regulatory hurdles. Nevertheless, the re-start process is happening and will add significantly to the uranium market fundamentals. Prime Minister Shinzo Abe who has a pro-nuclear stance, has been re-elected.

Figure 39 - Japanese reactor status



Source: WNA, PRIS, Shard Capital

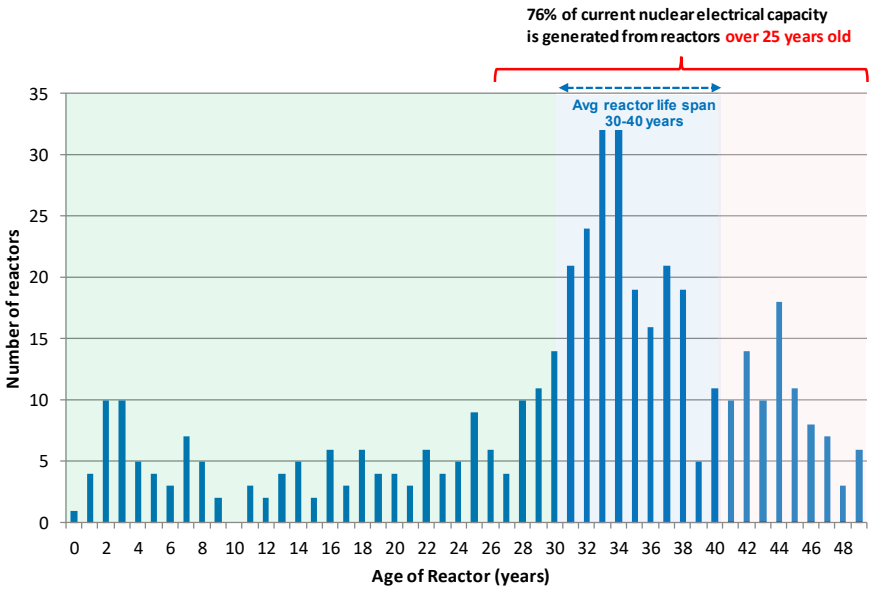
- **Post-fukushima**, the nuclear industry implemented a safety enhancement strategy to ensure that plants were configured with extra safeguards to respond to any potential natural disasters or other disruptions. These plant modifications include the provision of additional sources of water and electric power to keep the reactor and used fuel pool cool if electricity from the grid is unavailable, as was the case in Japan.

- **Pace of approvals likely to pick up.** It may take time, but we believe that the pace of new reactor approvals will gradually pick up, especially for reactors on Japan's west coast (Fukushima was on the east coast). 12 reactors**.** Japan has limited natural resources, and along with CO2 emissions targets, we see little alternative to Japan retuning to nuclear as a significant component of the country's energy mix.

The reactor fleet is aging…

- Of the 449 currently operating nuclear reactors worldwide, a significant portion are entering the last phases of their design lifespan. Thus, in addition to the reactor build-out to satisfy the demand for new generation capacity, new reactors are required to maintain base-line capacity.

Figure 40 - Nuclear capacity is disproportionally sourced from aging reactors



Source: PRIS, Shard Capital

- The typical design lifespan of a nuclear reactor built in the 1970s and 1980s is between 30-40 years according to the IAEA, although in practice the new breed of reactors can operate for up to 50-70 years, well in excess of their design lifespan. Nevertheless, a large proportion of reactors are effectively in the last half to third of their slated operational lifespan. As the age increases, the industry must increase spending on maintenance and modifications (extending reactor life is costly) or build new plants.

- In particular, most of the French and German reactors date from the 1970s, and if those plants were to all close at 40-50 years, Europe would lose a large proportion of its generating capacity, facing a power crunch somewhere between 2020-2030.

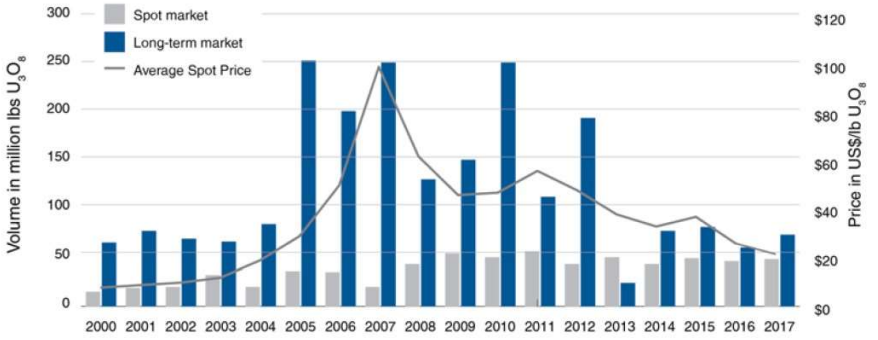
- We calculate the weighted average age of the 449 operating reactors worldwide is 30.2 years. 341 reactors are older than 25 years old or put another way this represents 76% of the world's nuclear generation capacity based on the net-generation capacity of each reactor. Other figures: 301 (>30years, 67% of capacity) and 98 (>40years, 22% of capacity).

- The point is that even in an optimistic case assuming average reactor lifespan of 50 years, a significant number of new reactors is required by 2025 to maintain the base-load capacity. Renewables can only fill a small proportion of this project supply gap unless new reactors are brought on-line, but this is also dependent on upgrades to renewable grid infrastructure.

Producer / Utility deadlock

- **Utilities have left the market, for now.** Utilities left the contracting market in 2013, and although volumes have increased somewhat, the utilities have not yet returned. Although cyclical, contract volumes for long-term uranium purchases were typically between 150-250Mlbs U_3O_8 pre-fukushima (250Mlbs in 2010). Contracting dropped off a cliff after 2012 and contract volumes remain at c.75Mlbs.

Figure 41 - Uranium contracting volumes and price history



Source: Cameco, Ux

- **Deadlock.** At present there is no incentive for long-term contracting to re-start. Utilities have access to large inventories and can buy cheaply in the spot market. Producers on the other hand are reluctant to get locked into long term contracts whilst prices remain at the bottom of the cycle.

- **Large inventory overhang.** Industry estimates of the total global uranium inventory (stockpiles) vary but typically the number is thought to be around 1,000Mlbs, most of which is held by utilities.

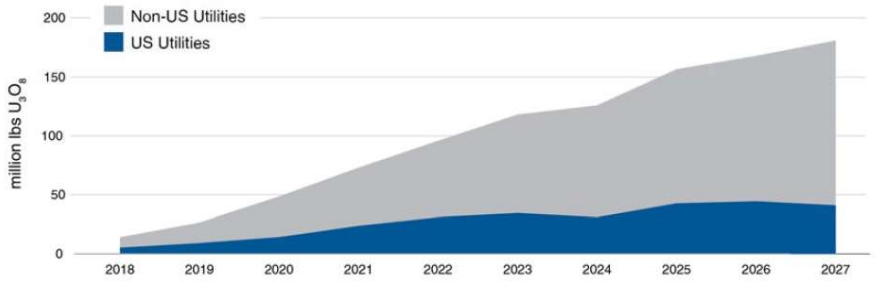
- **Forward planning.** Utilities typically secure uranium requirements 3-5 years out. If the reactor build continues and inventories continue to be whittled down, the spot market will be unable to fulfil the demand when utilities return to the long-term market.

- **The gap can only go one way.** Ux Consulting reports that over the last five years only 320Mlbs has been locked-up in the long-term market, while over 788Mlbs has been consumed in reactors. The timing is uncertain, but we believe that the utilities will at some stage be forced back into the market.

- **Security of supply** is likely to become the catalyst to force utilities back into the market. Given that the cost of uranium represents only about 5% of the total energy generation cost in a nuclear reactor, price concerns are overtaken by security of supply concerns, which historically has produced significant price spikes in uranium. The longer the delay in the resumption of long-term contracting, the less certainty there is that future supply will be able to meet demand.

- **Uncovered requirements.** Most industry estimates show cumulative uncovered requirements to be about 700-800Mlbs over the next ten years.

Figure 42 - Utility uncovered requirements (2018-2017)



Source: Cameco, Ux

Pricing and outlook

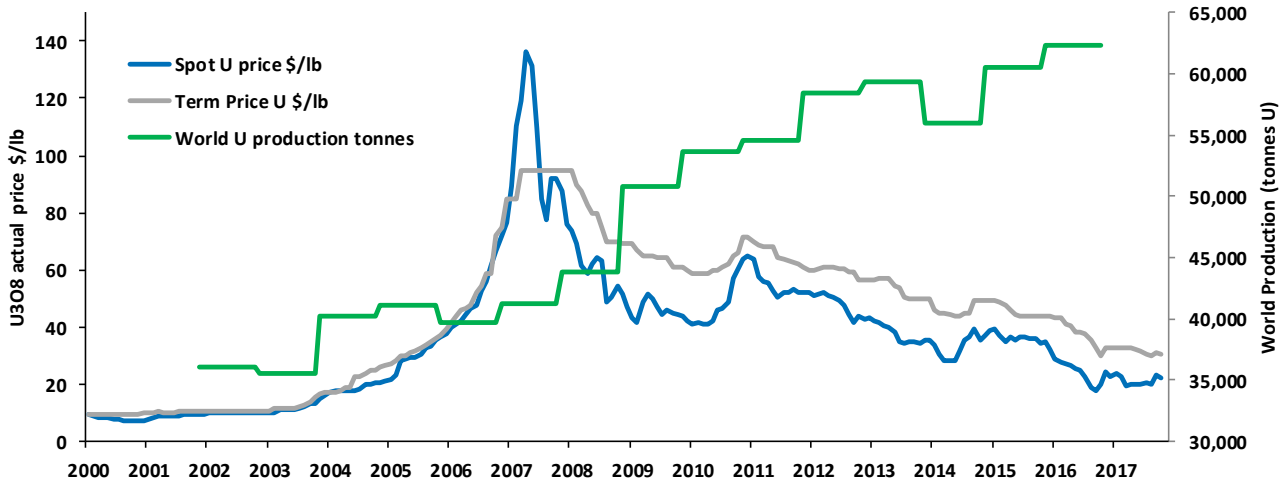
- **Uranium prices** have fallen by about 70% since the Fukushima accident in March 2011, from $65/lb in March 2011 to a low of $18/lb in November 2016, and currently at c.$22/lb.
- **Travel back to 2004.** Prices are currently at levels last seen in 2004, prior to the run up in prices as a result of the major increase in contracting volumes in 2005.
- **Low-point.** Uranium prices are so low that even some of the largest, lowest cost producers are underwater. This generally signals that we have seen or are currently working through the low point of the current cycle.

Figure 43 - Forecast market demand

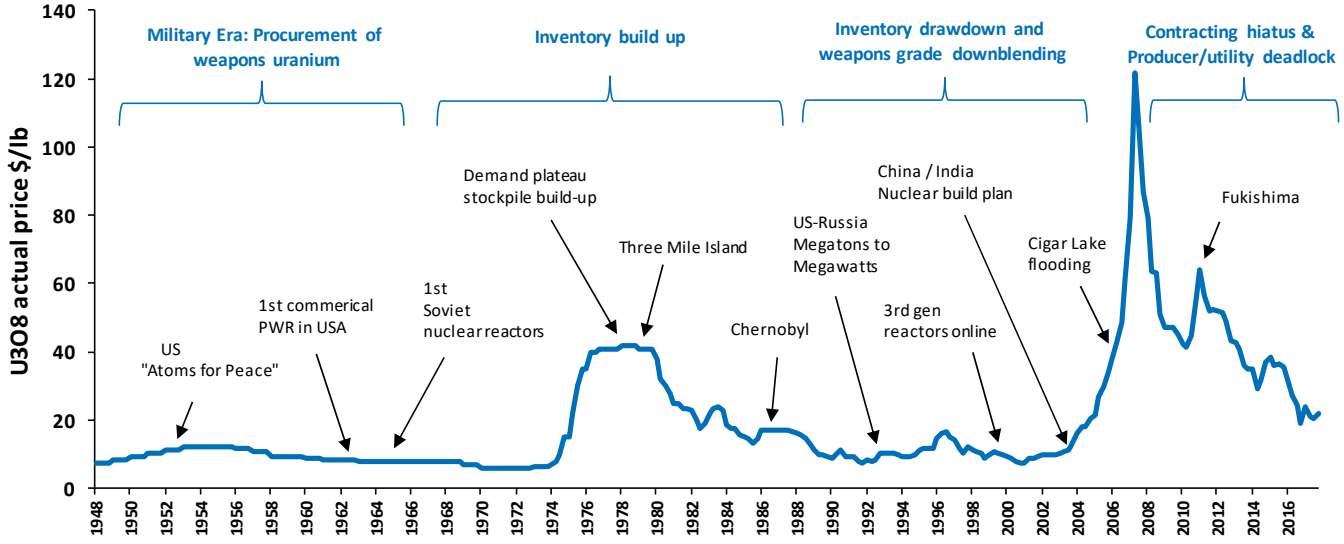
Source: Uranium Participation Corporation, Uxc

- **Prices remain at unsustainably low levels** in our view. We believe that we have already seen the bottom of the uranium price cycle and that industry fundamentals point to a major resurgence in prices. As and when this will happen, we remain unsure, along with the rest of the industry. Clarity on timing and catalysts for price appreciation remains opaque at present. However, when the market turns, we believe the upwards pressure on prices could be considerable.

Figure 44 - Uranium price history – 2000 to present



Uranium price history – 2000 to present vs key events



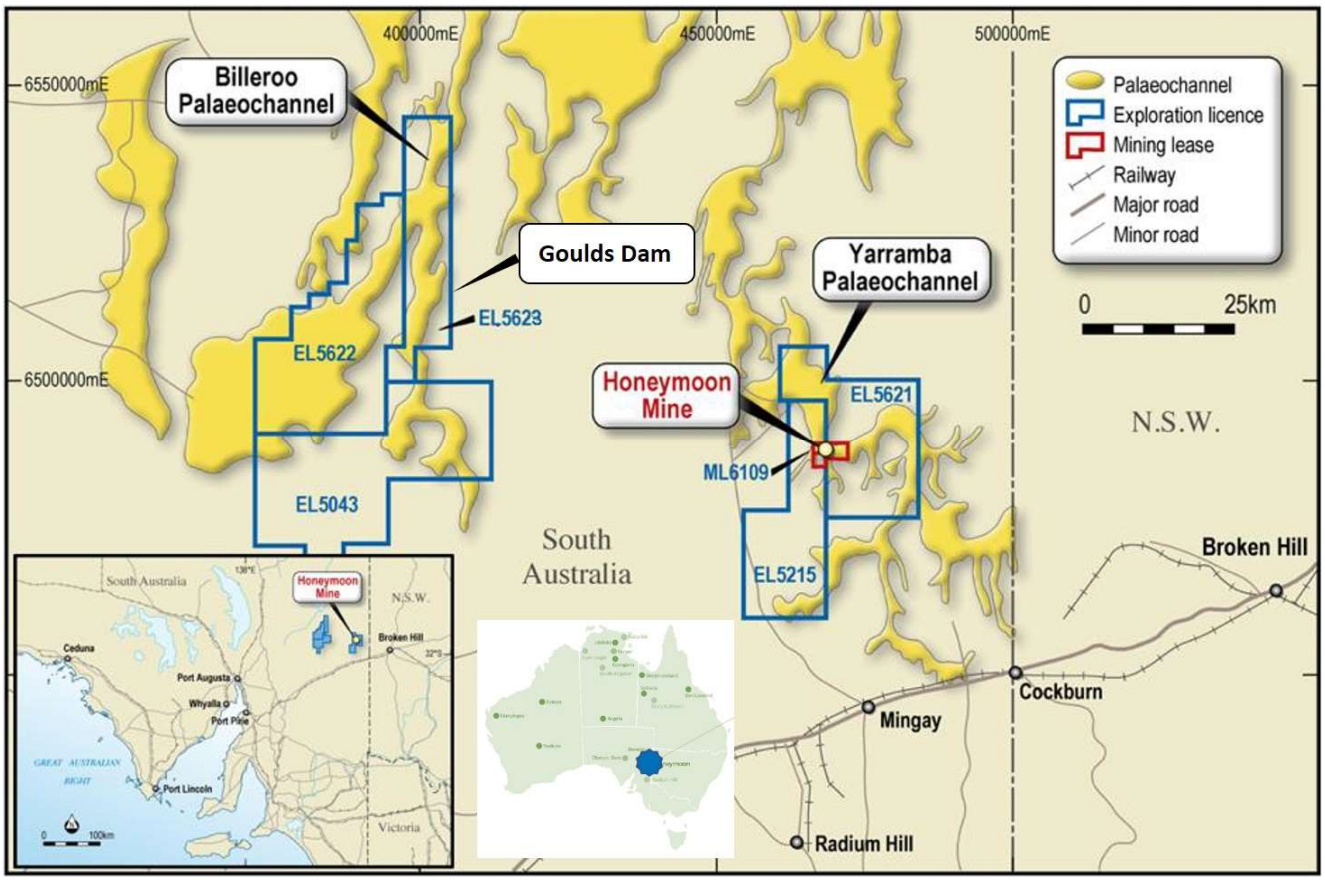
Source: Cameco, Shard Capital

Asset Overview

Location

The Honeymoon project is located in South Australia, 80km northwest from the mining town of Broken Hill, near the border between South Australia and New South Wales. The project is located between the Olary Ranges and Lake Frome, with the topography typified by gently undulating alluvial plains. The climate is semi-arid with hot dry summers (30-40°C) and a mean average rainfall of 200mm.

Figure 45 - Location of Honeymoon uranium project in South Australia



Source: Boss Resources

Infrastructure and Access

Honeymoon is readily accessible from Broken Hill via a sealed highway for the majority of the journey. We visited the project in January 2018 and flew in from Broken Hill (c.1 hour from Adelaide) and were driven to site. A painless process and we arrived at the mine site within a couple of hours of leaving Broken Hill. The final portion of the access road on project area lease is an unsealed gravel track.

Power and Water in place. As you would expect from a previously operated mine, the site infrastructure is excellent. Honeymoon is connected to grid power with a diesel generator back-up to provide power in case of any outages. These outages typically occur when the power line is sporadically hit by lightning. Potable water is processed from the Upper Aquifer using an onsite desalination plant. A 150-person camp remains in place, along with all other infrastructure for processing as we describe later in this note.

Figure 46 - Typical landscape in the Honeymoon area

Source: Shard Capital

Licences and tenure – fully permitted

Honeymoon is a fully-permitted operation with the all-important export licence, one of only four projects in Australia. This is a crucial point, considering the work that needs to be undertaken to fully permit a uranium operation. The project is comprised of a granted Mining Licence and five associated exploration licences. The mine infrastructure and plant sit within Mining Licence ML6109.

There are two main exploration regions, the Eastern Region (EL5215 and EL5621) which hosts the Honeymoon, Brooks Dam and East Kalkaroo Resources; and the Western Region (EL5043, EL5623 and EL5622) which hosts the Gould's Dam and Billeroo deposits.

Figure 47 - Tenements held by Boss Uranium Pty (Ltd)

Tenemenet Name	Type	Location	Licence number	Area (km2)
Honeymoon Mine	**Mining Licence**	**South Australia**	**ML6109**	**10**
Goulds Dam	Exploration Licence	South Australia	EL5623	334
Katchiwilleroo	Exploration Licence	South Australia	EL5622	652
Ethiudna	Exploration Licence	South Australia	EL6020	778
Yarramba	Exploration Licence	South Australia	EL5621	452
South Eagle	Exploration Licence	South Australia	EL6081	379

Source: Boss, Shard Capital

Project History

Boss acquired Uranium One Australia (Pty) Ltd from Uranium One Inc in December 2015, and changed the name to Boss Uranium Pty Ltd. The primary asset of Uranium One Australia was the Honeymoon Mining Licence and associated Exploration Licences. The ML included the Honeymoon solvent extraction processing plant, four existing ISR wellfields, support infrastructure, powerlines, operational and uranium export permits.

The Honeymoon project was originally a joint venture between Uranium One (51%) and Mitsui & Co (49%). The design capacity of the project was 0.88Mlbs per annum, with an approved capital cost budget of A$138m (2009) and a 6-year mine life. However, this overran to $146m due to cost overruns on the structural, mechanical and piping works, as well as the electrical and instrumentation works.

Figure 48 - Honeymoon history

Date	Event
August 2006	Honeymoon feasibility study announced, project approved
September 2006	Environmental licence received
September 2006	Technical report published
January 2007	10-year export permit granted
Mid-2009	Construction of Honeymoon commences
Q4-2010	Commissioning commences
Q1-2011	Construction completed
Aug 2011	First dried & drummed final product produced
February 2012	First shipment of uranium concentrates to the US
February 2012	Mitsui withdraws from the project, Uranium One moves to 100%
Q3 2012	Operations suspended due to fume & dust leak
Q1 2013	Final commissioning anticipated
Q3 2013	Production halted
Q4 2013	Honeymoon placed on care and maintenance, $68.8m impairment
March 2014	Ramp-down to steady-state care and maintenance
June 2014	South Australian government confirms care and maintenance phase
Dec 2015	Boss purchases Uranium One Australia

Source: Uranium One, Boss, Shard Capital

Uranium One struggled to commission the mine to meet nameplate capacity of 0.88Mlbs pa due to various production issues. The operation produced 100,000lbs in 2011, 340,200lbs in 2012 and 246,500lbs in 2013. The plant was temporarily suspended in Q3 2012 due to a fume and dust leak in the drying plant, and other regulatory requirements which reduced production capacity. Equipment and design modification in the calcium removal plant also delayed the final commissioning of the plant to Q1 2013.

During the Q3 2013, the carrying value of Honeymoon was written down by $67.8m, impairing the project due to the continuing difficulties in the production process and issues in attaining design capacity, combined with high mine operation costs. The project was further impacted by a period of lower uranium prices, with the average price being $38/lb in 2013, versus $47.4/lb in August 2006 at the time of project construction approval.

Acquisition from Uranium One

In September 2015, Boss entered into an agreement to acquire 100% of the issued share capital of Uranium One Australia, which owned the Honeymoon Uranium Project. The consideration comprised:

- A$200,000 site access fee - paid ✓
- Initial cash payment of A$2.4m – paid ✓
- A$3m under a promissory note repayable within 24 months of completion, and A$4m under a promissory note issued and repayable within 48 months of completion. The promissory notes are secured under the terms of a general security deed. Repayment of the amounts due under the promissory notes may be accelerated in certain circumstances, including where Boss raises financing of $15m.
- Contingent payments: A$2m payable in cash and/or shares upon the later of restart of the operations with commercial production or 5 years of completion, and 10% of the net operating cash flow of the Honeymoon Project payable annually up to a maximum of A$3m.

Boss increases ownership to 100%

In December 2017, Boss signed a binding agreement to acquire 100% of the shares in Wattle Mining Pty (Ltd). Wattle held the remaining 20% of the shares in Boss Energy Pty Ltd, the holding company for Boss Uranium Pty Ltd and the Honeymoon Uranium Project. On 28th February 2018 the acquisition was approved by shareholders, and Boss issued 300m shares to the vendor in consideration for the acquisition in March.

Wattle was acquired from Grant Davey, a director of Boss. On completion of the acquisition, Mr Davey's relevant interest in Boss increased to 311.48m shares or 22.7% of the Boss shares on issue (assuming no conversion of the unquoted options or performance rights on issue), now 19.8% post the $8m capital raise in March.

The equity only acquisition has delivered 100% ownership of the project including:

- The highly prospective exploration licences
- Process Plant and mine infrastructure
- Uranium export licence

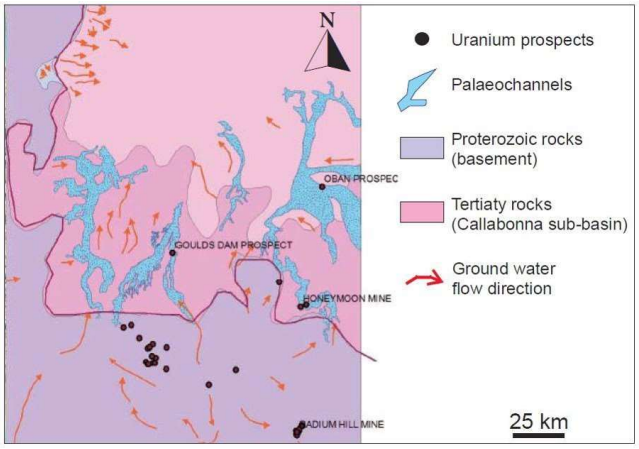
The Rationale – acquire before value uplift. Whilst the acquisition of the remaining 20% of the project added in some equity dilution, we believe that ultimately, consolidating Boss's interest in the mine is beneficial, especially as the deal has been done prior to any potential value increase as Honeymoon progresses through development stages. Previously, Wattle was free-carried, with Boss having the right to buy out the 20% interest at completion of a BFS. Typically, a post-BFS acquisition in this sector would be a more expensive way to acquire the remaining stake, due to the anticipated value accretion as the project further de-risks.

The project and management structure has now been simplified and provides Boss with to full exposure to the project's resource inventory, future production and cashflows and any future exploration success or resource growth. We believe that this will be advantageous during the process of securing equity or debt financing to build the project, and during the process of securing off-take as Boss now has control over 100% of Honeymoon's uranium production.

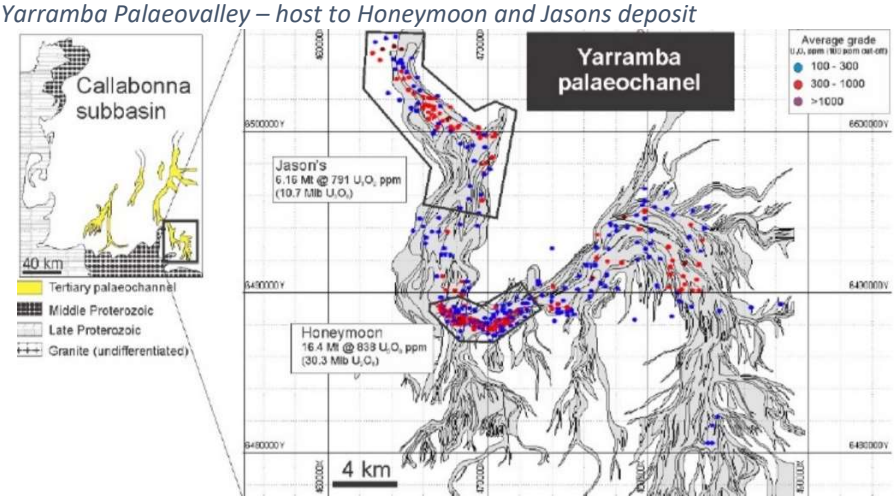
Geology

Honeymoon is situated in the southern part of the Callabonna sub-basin in South Australia. The Honeymoon and Jasons deposits are hosted by the 50km long Yarramba palaeovalley, whilst the Goulds Dam deposit is hosted by the Billeroo palaeovalley situated to the northwest of Honeymoon.

Figure 49 - Regional geological setting and palaeochannel distribution



Yarramba Palaeovalley – host to Honeymoon and Jasons deposit



Source: Boss

Classic uranium mineralisation style. The uranium mineralisation in the area is consistent with the classic basal channel type sandstone-hosted uranium roll-front model. The genesis of this type of deposit requires the movement of oxidised, uranium-bearing fluid through a largely reduced aquifer, with uranium mineralisation occurring at the redox front of the fluid. The key point is that the deposit type is very well suited to in-situ recovery methods.

Controls. Boss believes that the distribution of mineralisation is controlled by fluid pathways that transported the dissolved uranium, and the distribution of organic matter which served as a reductant triggering uranium precipitation. Interplay of these two main factors has created a stacked geometry of the "uranium rolls" commonly distributed as elongate pods along the strike of the palaeovalley. These features are similar to the uranium deposits of the Great Divide basin in Wyoming.

Mineralogy. The main uranium-bearing minerals are uraninite (UO_2) and coffinite (empirical formula $U(SiO_4)(OH)_4$. Geochemical zonation is associated with the roll front, including oxidation of the sands upstream (orange and yellow limonite) and abundance of pyrite/marcasite and organic matter downstream.

Resource

The global resource (JORC 2012) for all deposits that constitute the Honeymoon project is 43.5Mt at 660ppm U_3O_8, for 63.8Mlbs of contained metal at a cut-off grade of 250ppm. The resource is split into three main deposits; Honeymoon, Goulds Dam, and Jasons. This compares to the resource at acquisition of 5.29Mt at 1,400ppm for 16.57Mlbs contained U_3O_8 at a 500ppm cut-off.

The Measured resource for the Honeymoon deposit grades 1,720ppm (one of the higher-grade ISR deposits globally) and is the primary feed source for the first few years of operation.

Figure 50 - Honeymoon – total project JORC resource

Category	Tonnes (Mt)	Grade eU3O8 (ppm)	Contained metal (kt U_3O_8)	Contained metal (Mlbs U_3O_8)
Jasons Deposit (March 2017)				
Inferred	6.2	790	4.9	10.7
Total	**6.2**	**790**	**4.9**	**10.7**
Goulds Dam (April 2016)				
Indicated	4.4	650	2.9	6.3
Inferred	17.7	480	8.5	18.7
Total	**22.1**	**510**	**11.3**	**25.0**
Honeymoon (January 2016)				
Measured	1.7	1,720	3.0	6.5
Indicated	1.5	1,270	1.9	4.2
Inferred	12.0	640	7.6	16.8
Total	**15.2**	**820**	**12.5**	**27.6**
Project Total (all deposits)				
Measured	1.7	1,720	3.0	6.5
Indicated	5.9	810	4.8	10.6
Inferred	35.9	586	21.0	46.7
Total	**43.5**	**660**	**28.8**	**63.8**

Source: Boss, Shard Capital

Geology reinterpreted. Boss reviewed all the historical exploration, drilling and geology data to compile a 3D model of mineralisation within the 5km by 50km mineralised trend hosted by the Yarramba Palaeochannel. The 2016 Honeymoon resource incorporates the results of 1,689 drill holes representing 205,375m of drilling. The resource was based on 0.5m drill composites and 10x10x0.5m block model, using PFN and natural gamma grade data. Grade estimation was made using multiple indicator kriging.

Higher confidence. It's worth noting that at acquisition only 20% of the Honeymoon deposit sat in the Indicated category (8.46Mlbs). In the latest iteration of the resource, 39% (10.7Mlbs) of the resource is contained within the higher confidence measured and indicated categories.

Overall, 27% (17.1Mlbs) of the global resource sits in the M&I category. This has been skewed somewhat by the recent addition of the Goulds Dam and Jasons deposits, where the majority of the resource sits in the Indicated category, reflecting the early stage of resource development and drilling.

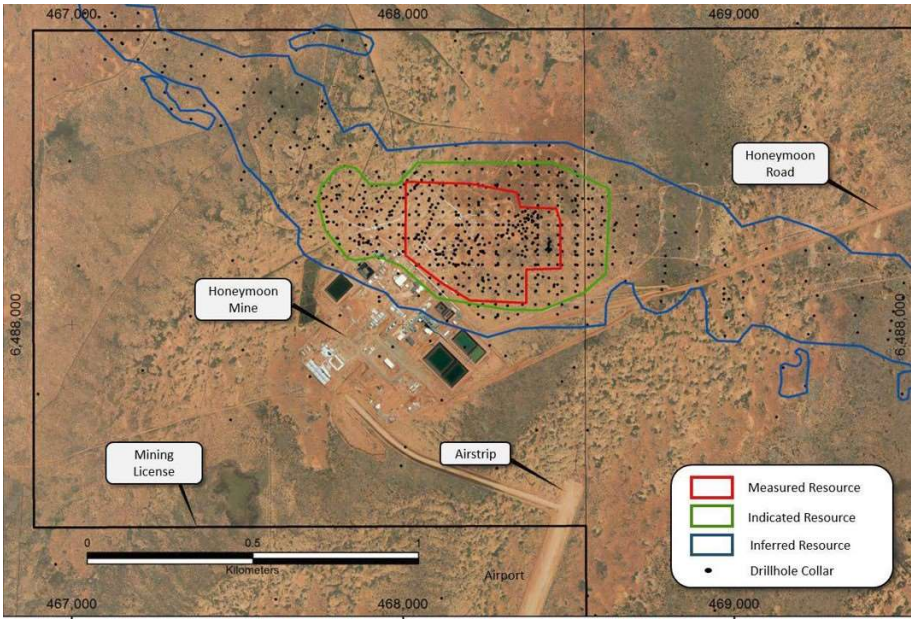
Resource growth. In addition to the application of Boss's preferred cut-off grade of 250ppm, Boss has successfully grown the resource by 285% since acquisition. As we outlined earlier in this note, this has been achieved by various resource additions. At the honeymoon deposit the increase in endowment and higher confidence level is related to a better understanding of the geology, mineralisation continuity and volume due to the advanced 3D geostatistical modelling used.

Resource Boost. Apart from the optimisation and upgrade of the Honeymoon deposit resource, Boss has grown the resource inventory through the reporting of maiden resource estimates for the Goulds Dam (April 2016) and Jasons deposits. These are spatially separate deposits from the honeymoon deposit. Jasons is hosted within the same palaeochannel 12km north of Honeymoon, but Goulds Dam is hosted in the separate Billeroo palaeochannel in the west of the project region.

Goulds Dam. The maiden Goulds Dam resource added 25Mlbs U^3O^8 to the resource inventory, and the Jasons deposit added 10.7Mlbs. The Goulds Dam resource was based on the results from 968 historical holes.

Jasons Deposit. The maiden Jasons deposit resource in June 2016 added 5.2Mlbs to the resource inventory and was based on a review of 165 historical drill holes. The resource was further upgraded in March 2017 on the back of drilling undertaken by Boss in December 2016 to January 2017. This enlarged the database to 274 holes, comprised of 197 historical holes and 77 new holes. The resulting resource estimate doubled the Jasons deposit resource from 5.2Mlbs to 10.7Mlbs.

Figure 51 - Honeymoon resource outline

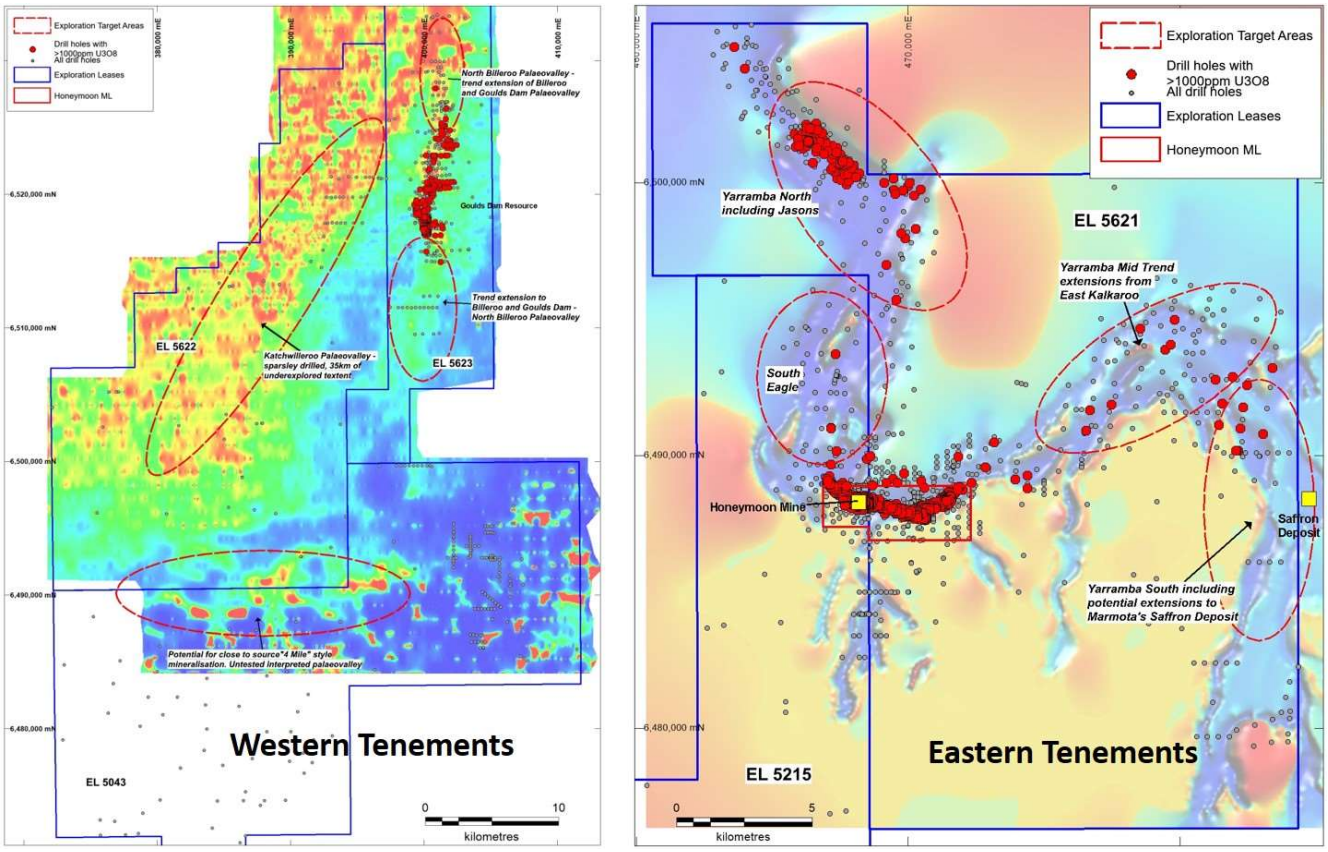


Source: Boss

Compelling resource growth potential

Boss has a combined exploration target across the total 2,600km^2 tenement package of between 32Mt and 78Mt. Based on a target grade of between 450ppm and 1,400ppm this equates to a potential target endowment of between 42Mlbs and 100Mlbs of additional U_3O_8. Whilst this estimate is conceptual in nature it demonstrates the significant potential of the area. The exploration target is based on the review of over 2,500 historical holes plus recent drilling by Boss, in combination with geophysics and other field work. The target covers both the eastern and western tenements.

Figure 52 - Exploration Potential on both western and eastern tenements



Source: Boss

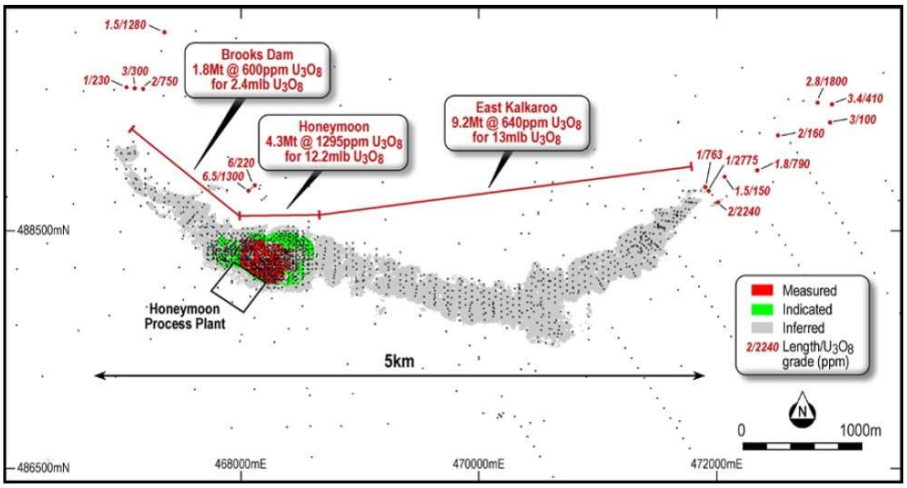
Expansion potential at Honeymoon (Eastern Tenements)

Boss has an extensive tenement area, but clearly, the imperative remains to focus on near-mine additions to the resource as close to the existing mine infrastructure as possible. To date, exploration by Boss has been focussed on increasing the resources areas of Honeymoon and Jasons Prospects, however drilling of the palaeochannel away from these areas by previous explorers has been sparse.

The current exploration database at the Honeymoon deposit contains additional high grade mineralised intercepts of up to 2.8m at 1800ppm eU_3O_8 over 1km outside of the current resource boundary (see figure next page). This indicates potential to extend the deposit further.

The company's total exploration target for the eastern tenements is 11 to 15Mt at between 380ppm and 1,200ppm, equating to an exploration target of between 18Mlbs and 47Mlbs U_3O_8.

Figure 53 - Honeymoon – near-mine resource expansion potential



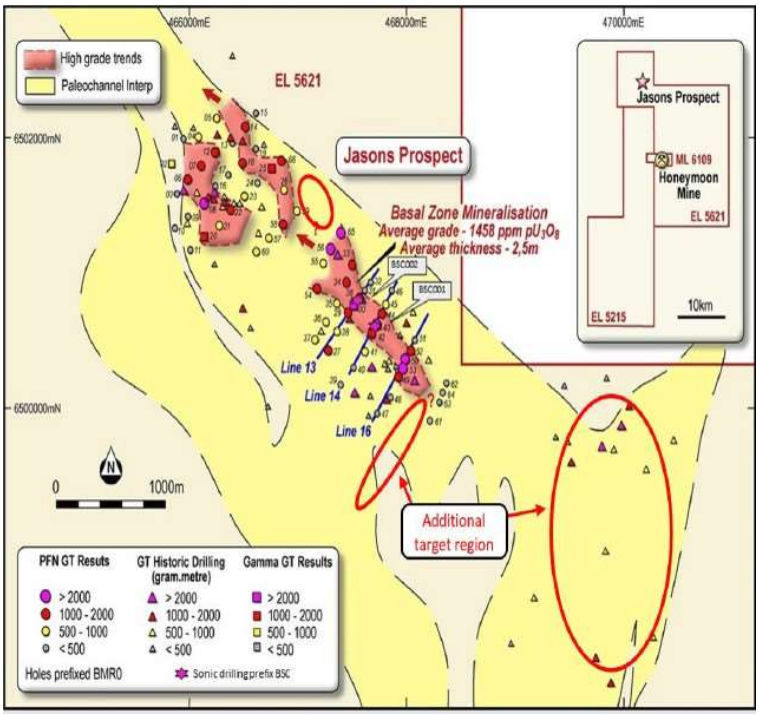
Source: Boss

Expansion potential at Jasons (Eastern Tenements)

Boss release the final results from a mud-rotary drilling programme at Jasons in May 2017. The drilling program commenced in the northern region of the deposit before shifting to the southern region. The final part of the program infilled between the northern and southern drilling. A high-grade trend of >1,300m long was identified in the southern drill region.

The results support the general endowment seen in historical drilling. Crucially, good lateral continuity of mineralisation was encountered, and Boss believes there is scope to expand the resource beyond the current 10.7Mlbs.

Figure 54 - Jasons Deposit - resource expansion potential



Source: Boss

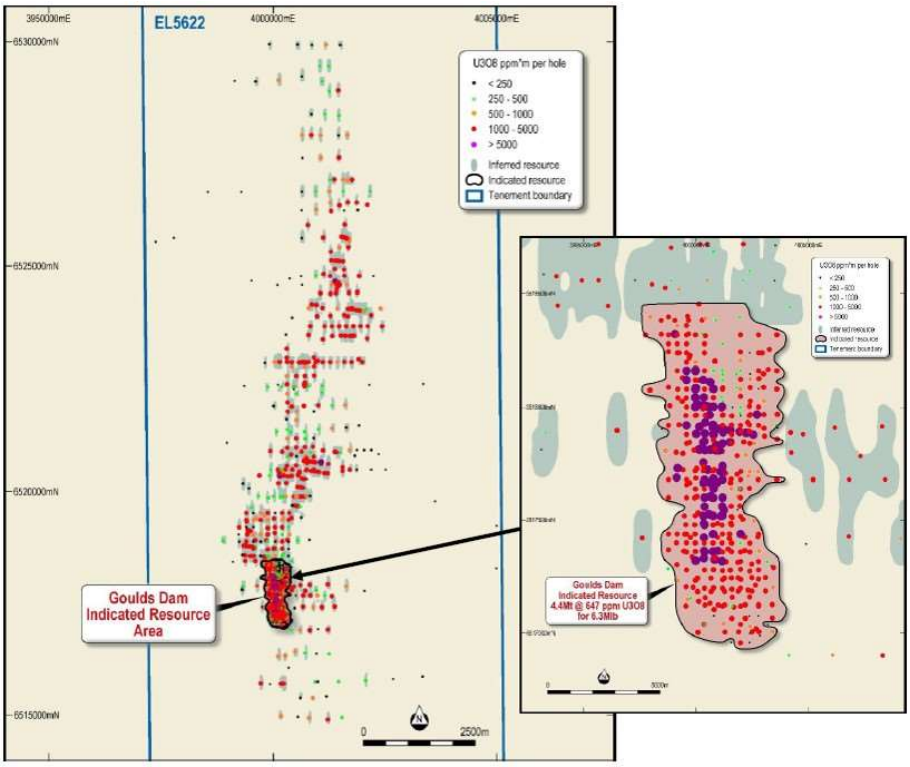
Expansion potential at Goulds Dam and Western Tenements

The western tenements currently host a resource of 25Mlbs U_3O_8, represented by the Gould's Dam deposit. Boss has identified 54km of potentially mineralised strike in the area, suggesting that the company has only just started to scratch the surface of the regional potential. The Billeroo palaeochannel hosting the Goulds Dam deposit is vast and has only seen limited exploration to date. Boss has identified 12km of highly prospective, yet under drilled prospective ground and expects that further drilling could add significantly to the resource endowment.

Analysis of the drilling by Boss indicates significant potential for additional infill and trend extensions to the Gould's Dam mineralisation. As part of the global exploration target of 42lbs to 100Mlbs, Boss has a target of between 10Mt and 20 Mt at Gould's Dam. At projected grades of between 300ppm and 1200ppm eU_3O_8 this would equate to between 10Mlbs and 20mlbs of contained U3O8 in addition to this current JORC resource of 25Mlb of contained U_3O_8.

Beyond the immediate Gould's dam area, the overall target for the Western Tenements is 21.5Mt to 53Mt at between 480ppm and 1,500ppm which equates to an exploration target of 24Mlbs to 53Mlbs.

Figure 55 - Goulds Dam Deposit - resource expansion potential



Source: Boss

ISR Mining and Processing

The uranium mineralisation at Honeymoon is a sandstone-hosted roll-front type deposit. The deposit is hosted by the Lower Eyre formation, situated approximately 100m below the surface, below the water table. As the deposit is in an aquifer and confined above and below by impermeable stratigraphy, it means that the deposit is amenable to In-situ Recovery (ISR) mining.

ISR – a cost effective method

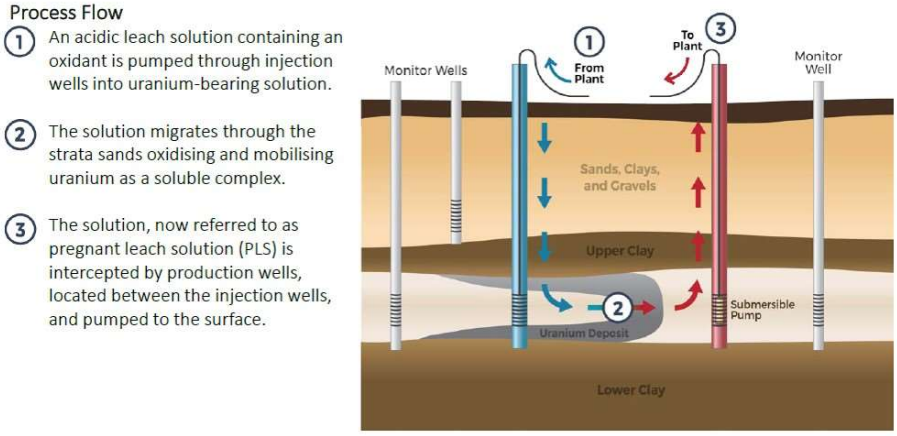
ISR is the most common mining method globally and has several advantages over conventional mining, typically being a lower capital cost option that also has relatively low operating costs. ISR is also considerably more environmentally friendly than open pit or underground uranium mines. The World Nuclear Association estimates that 48% of world uranium production in 2016 was sourced from ISR operations. Honeymoon is one of two ISR uranium operations in Australia, the other being the Beverley deposit 520km north of Adelaide, operated by Heathgate resources.

ISR Recap

ISR mining is well-documented process and as such it is not necessary to go through the process in detail. Suffice to say that the technique utilises a wellfield design, with injection wells and production (extraction wells) progressively established over the uranium resource. The groundwater is fortified with a complexing agent, typically an acid-leach as at Honeymoon, or alkali leach, depending on the mineralogy and chemistry. The leach liquors are pumped into the injection wells and circulated through the orebody to dissolve the uranium minerals in-situ.

The pregnant leach solution (PLS) is then pumped out via the extraction well to the processing plant for further treatment. Uranium is typically recovered by resin/polymer in ion exchange (IX) or liquid ion-exchange (typically kerosene) in a solvent extraction (SX) system. IX is used in the majority of operations in Kazakhstan, Australia and the US and is normally preferred due to capital and operating cost advantages.

Figure 56 - ISR process



Source: Boss

ISR at Honeymoon – the plan

Previous hydrogeological testwork including; field leach trials, solvent extraction piloting and associated mining studies carried out by the previous owners as well as the actual Honeymoon operation have confirmed that the Mineral Resources at Honeymoon are amenable to exploitation using in situ leach technologies.

At Honeymoon the wellfields have been designed on a 5-spot pattern with a single extraction well surrounded by four injection wells. This layout has the advantage of minimising wellfield development cost and providing a flexible layout for optimising leach performance.

The mineralogy including the fine texture, is ideal for acid leaching with the presence of the phosphate minerals indicating that portions of the deposit should have low oxidant reagent demands. The presence of the calcite in the deposit requires strategies for managing gypsum precipitation and oxidant levels also need to be managed to minimise pyrite dissolution to ensure reagent consumption is not excessive. The high chloride levels required the selection of appropriate solvent extraction and / or ion exchange systems.

SX, with IX to be implemented with the expansion

The existing Honeymoon plant has successfully demonstrated the use of a modified extractant for solvent extraction (SX), while extensive testwork in both the initial Expansion Study and the recently completed PFS have identified a resin that is suitable for the proposed ion exchange expansion.

Stage 1. Thus, Boss's plan is to initially recommission the existing solvent extraction processing facility (Stage 1) with a nominal capacity 0.88Mlbs/annum and implement a raft of modifications to resolve processing issues that were identified during the original operational period. Initially the wellfields previously developed by Uranium One (specifically Wellfield D) will be brought back online as feed to the plant, but as production ramps up new wellfields will be brought on sequentially to match production needs.

Stage 2. The next expansion, stage 2 to increase production to 2Mlbs will involve the construction of a new ion-exchange (IX) circuit and associated processing infrastructure required to handle the increased PLS flow rates.

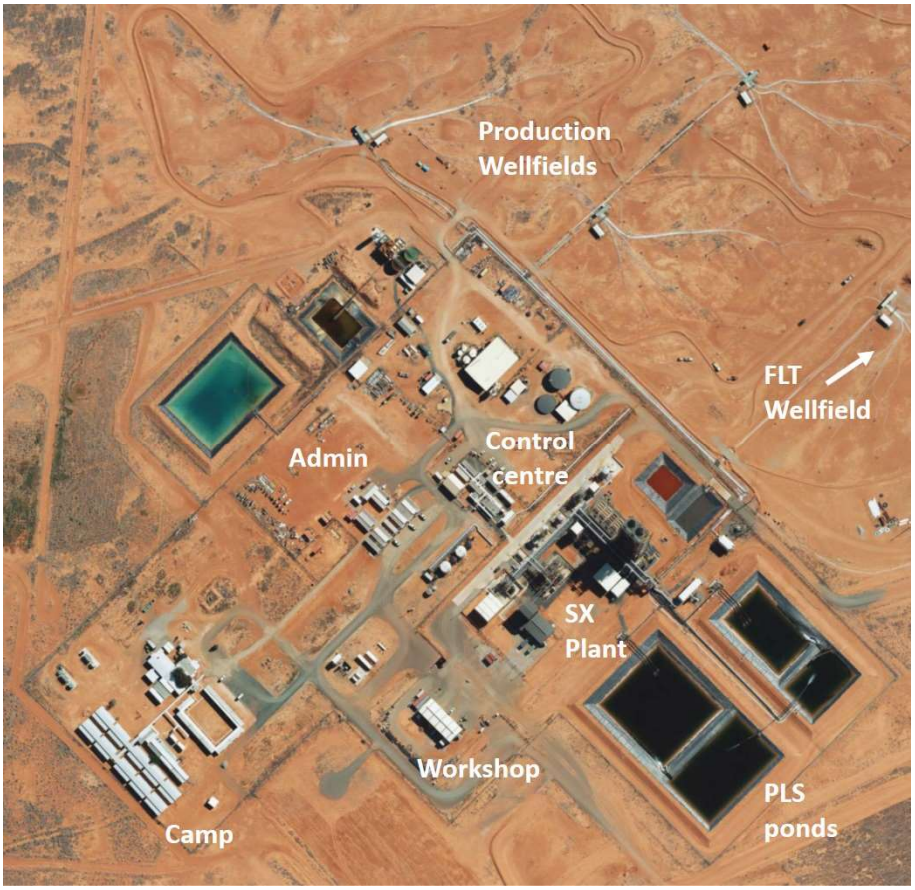
Stage 3 expansion to 3.2Mlbs/annum to the maximum currently allowed under the Federal Government export approval is predicated on the development of a satellite operation at Gould's Dam with IX adsorption columns and trucking of loaded resin to Honeymoon. The Honeymoon plant would be modified with an additional elution column and downstream circuits to meet the increased production target.

Existing infrastructure at Honeymoon

In addition to the value of the mining and exploration licences, the acquisition from Uranium One has resulted in Boss inheriting approximately A$170m of established infrastructure including the Solvent Extraction processing plant. The plant has been kept on care and maintenance to the highest standards and remains in excellent condition. The main assets acquired from Uranium One were:

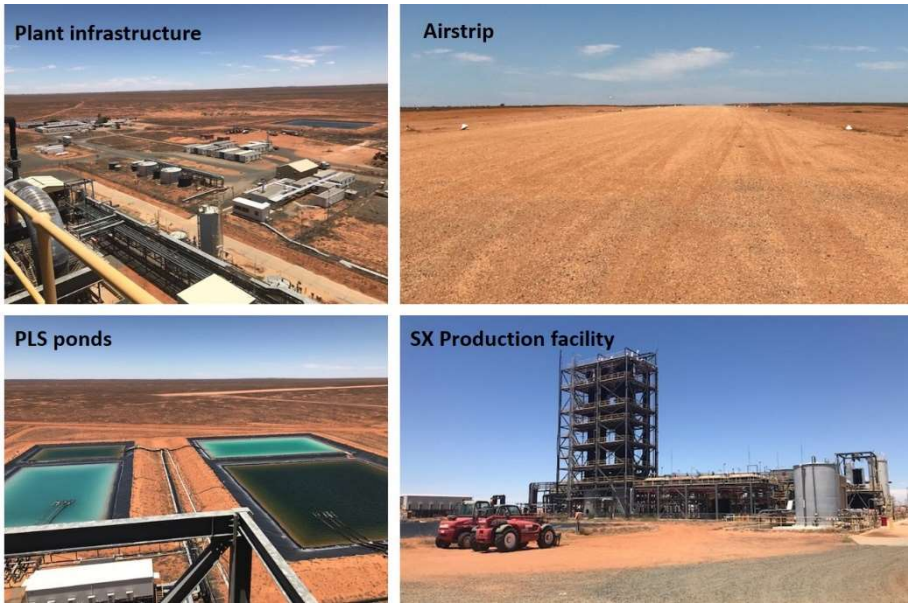
- Solvent extraction processing plant (880,000lbs capacity U_3O_8 p.a) - currently on care and maintenance.
- Well fields currently on care and maintenance
- 200-person operating mining camp
- Administration buildings
- 75km power line connecting to mains power
- A fleet of vehicles, spares and other equipment associated with the commissioning of the Project
- Runway capable of landing light planes
- Extensive geological database of 17,000 drill holes and associated logging information

Figure 57 - Aerial view of Honeymoon plant and associated infrastructure



Source: Boss, annotated by Shard Capital

Figure 58 - Honeymoon infrastructure



Source: Shard Capital

Figure 59 - Camp, admin, laboratory, control room infrastructure

Source: Shard Capital

Figure 60 - Uranium yellowcake storage and final product in drums

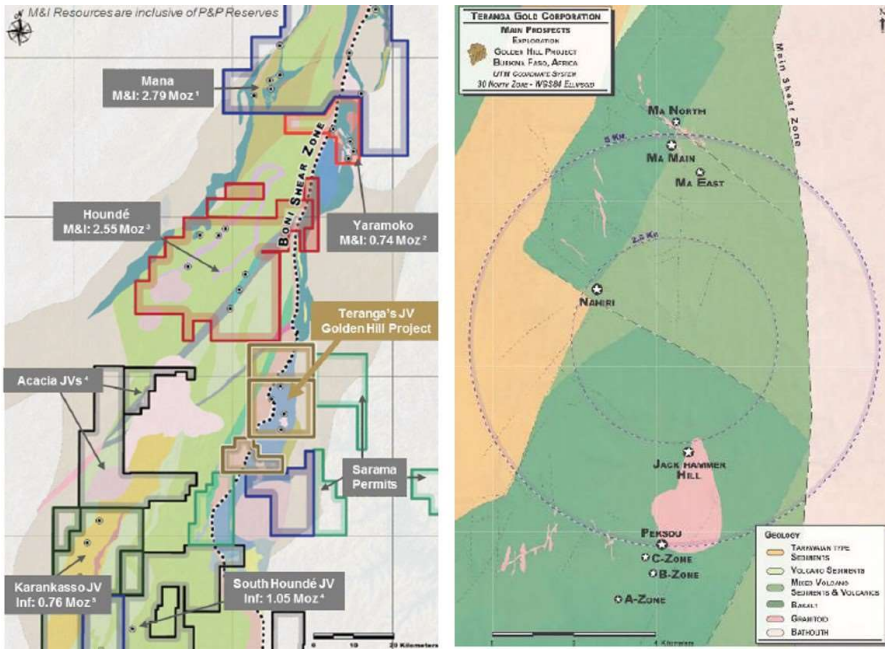
Source: Shard Capital

Burkina Faso Gold Assets

JV with Teranga

Boss Resources has a joint venture with Teranga Gold Corporation (TSX:TGZ), whereby Teranga is earning into the Golden Hill and Gourma Gold Projects in Burkina Faso. The gold projects are highly prospective, but because Boss's main focus is now uranium, the company is in the process of evaluating offers regarding the potential divestment of the assets.

Figure 61 - Golden Hill location in the prolific Houndé Belt



Source: Shard Capital

Due to the free carried nature of the joint venture agreement prior to the completion of a DFS and Decision to Mine, Boss directly benefits from the expanded exploration program planned for 2018 in the order of C$8m. The salient terms of the earn-in agreement with Teranga and Boss on the are as follows:

- Teranga and Boss currently own 51% and 49% respective interest in the Golden Hill and Gourma Gold Projects;
- Teranga to sole manage the joint venture and fund all exploration on the projects up to the completion of a DFS and Decision to Mine;
- Boss has a free-carried interest to completion of a DFS and decision to mine;
- On delivery of the DFS Teranga's interest in the joint venture will increase to 70%;
- Teranga has the right to acquire an additional 10% in the joint venture for A$2.5m cash;
- Upon completion of the DFS but prior to a Decision to Mine, Boss may elect to convert the remainder of their 20% interest to a 1.5% Net Smelter Return, otherwise Boss shall be free carried to a decision to mine and will then be required to contribute on a pro rata basis; and
- Pre-emptive rights stipulated should a third-party offer exist.

One of the most prolific gold belts in West Africa

The main focus of exploration is at the Golden Hill project. The Golden Hill property consists of three adjacent exploration permits covering 468km^2 located in the southwest of Burkina Faso, approximately 200km northeast of Teranga's Banfora gold project (2.5Moz).

Golden Hill is considered particularly prospective as it is located within the central part of the highly mineralized Houndé Greenstone Belt. This belt hosts several high-grade gold discoveries, including the Siou (Semafo), Yaramoko (Roxgold) and Houndé (Endeavour) deposits, the latter being contiguous with Golden Hill.

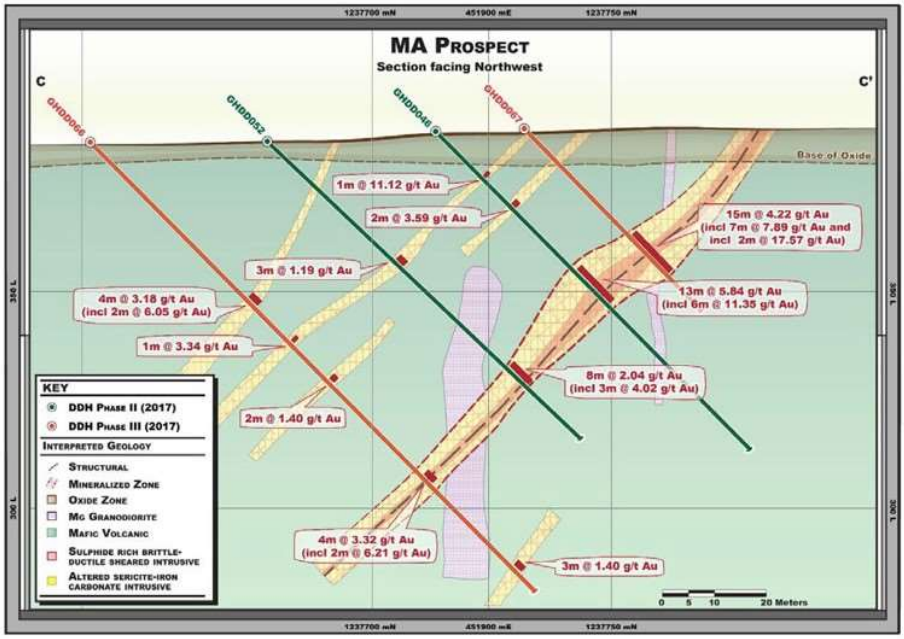
Drilling continues to yield exciting results

Teranga has been extremely active at Golden Hill and has been disclosing drill results regularly. Early-stage drilling continues to yield high-grade, near-surface oxide gold mineralization. In just one year, there have been three discoveries at Golden Hill. The priority prospects are:

- **Ma**
- **Jackhammer Hill**
- **C-Zone**
- Peksou
- Nahiri

Exploration work is currently focused on these five main targets which are all are located within a 5km radius of a central point in the project area. As such, the close proximity of these targets and prospects lends itself to a central mill/multi-deposit operation similar to Sabodala and Wahgnion. **Teranga reports that it is rapidly progressing towards a maiden resource estimate for the Golden Hill in 2018**. Teranga has secured $25 million for future advancement of its Golden Hill project to feasibility study.

Figure 62 - Ma prospect – representative drill section



Source: Teranga

Ma Prospect

Ma is the most advanced prospect at Golden Hill and work so far has defined a 2.4km long mineralised system comprising multiple mineralized zones within a broad regional structural complex. The Ma prospect remains open to the east and the west and to depth, and Teranga expects to complete an initial resource by end of 2018. Recent drilling at Ma continues to confirm the continuity of grade and width from surface down to a depth of approximately 125m. Recent drill highlights include:

- 15 m at 4.22 g/t Au including 7 m at 7.89 g/t Au including 2 m at 17.6 g/t Au (GHDD-067)
- 16 m at 3.20 g/t Au including 1 m @ 15.7 g/t Au, and3 m at 6.14 g/t Au (GHDD-078)
- 6 m at 5.79 g/t Au and17 m at 3.45 g/t Au including 6 m at 6.32 g/t Au (GHDD-080)
- 7 m at 5.78 g/t Au from 14m (GHDD-095)

Jackhammer Hill

At the Jackhammer Hill prospect, Teranga has been outlining hidden potential at a previously undrilled target. A 1,000m long auger, soil and rock chip anomaly has been outlined and initial drilling results from 600m strike of this anomaly are highly encouraging, including some exceptional "bonanza style" grades. Early drilling has identified multiple mineralised zones which Teranga plans to follow up on with an aggressive drill programme in 2018.

- 15 m at 5.72 g/t Au including 4 m at 16.37 g/t Au including 1 m at 42.1 g/t Au and 9 m @ 4.13 g/t Au including 3 m at 10.63 g/t Au including 1 m at 25.3 g/t Au (GHDD-104)
- **14 m @ 110.6 g/t Au including 5 m at 306.7 g/t Au** including 1 m @ 1,499 g/t Au (GHDD-111)

Figure 63 - Visible gold in GHDD-111 at Jackhammer Hill

Source: Teranga

C-Zone Prospect

On the 16th April, Teranga reported further impressive drill results from the C-Zone prospect at Golden Hill. The C-Zone prospect is located just south of Peksou, another of the advanced prospects at Golden Hill, and at present has a defined strike length of approximately 600 m.

Phase 1 results (Feb 2018)

The Phase 2 drilling results follow on from the Phase 1 results released in February 2018. The Phase 1 drilling confirmed that the gold mineralised zones continue to depth with key intercepts including:

- 6 m @ 4.64 g/t Au (GHDD-188) from 52 m (Inc. 2m 10.77g/t)
- 11 m @ 4.87 g/t Au (GHDD-189) from 52 m (Inc. 2m at 11.32g/t)
- 4 m @ 1.76 g/t Au (GHDD-190) from 67 m
- 8 m @ 3.76 g/t Au (GHDD191) from 61 m (Inc. 1m at 19.74g/t)
- 10 m @ 1.91 g/t Au (GHDD-192) from 45 m

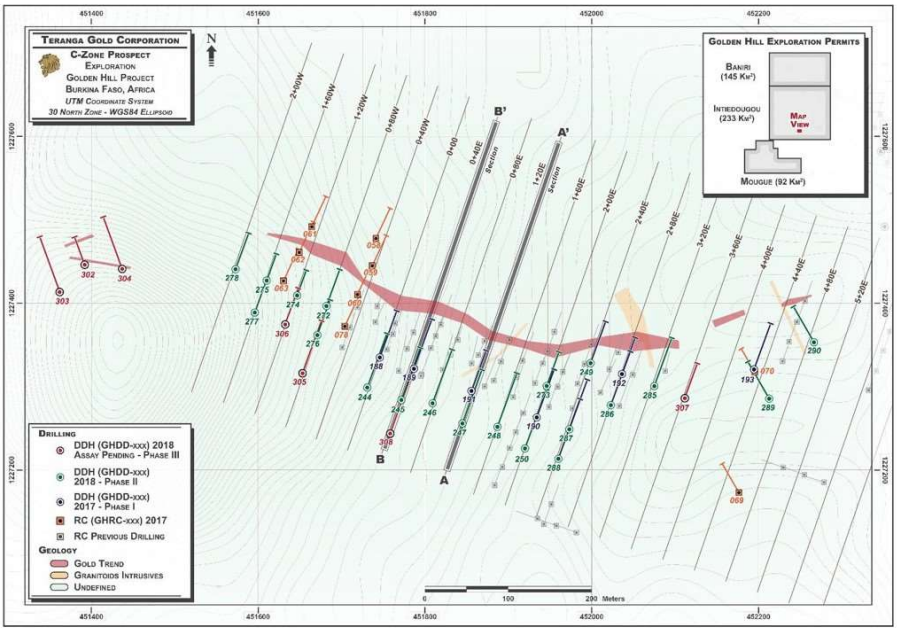
Within these intersections were further high-grade intervals which provides further evidence of the high-grade nature of system.

Phase 2 results (April 2018)

The Phase 2 diamond drill programme produced more exploration success, with the results from the latest round producing further high-grade intercepts from near surface, and from depth. Highlights from Phase 2 included:

- 7 m at 21.86 g/t Au inc 1 m @ 136.01 g/t Au uncut grade from 26 m
- 10 m at 6.03 g/t Au inc 1 m at 23.85 g/t Au from 91 m
- 12 m at 3.91 g/t Au inc 5 m at 6.66 g/t Au from 84 m
- 8 m at 3.64 g/t Au from 35 m

Figure 64 - C-Zone Prospect – Drill Plan



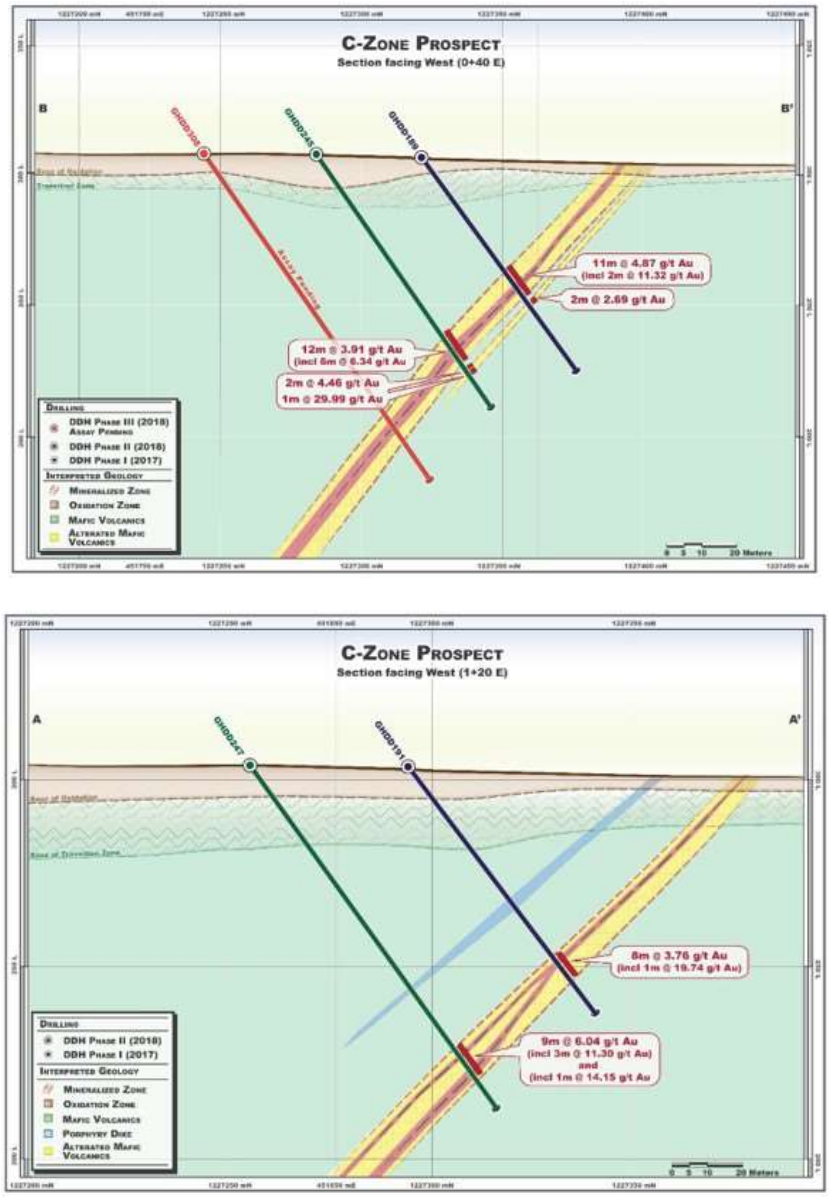
Source: Teranga / Boss

The Phase 2 drill results mean that the C-Zone prospect has been elevated from a drill-target to the category of advanced exploration. Significantly, the drill results confirmed the continuity of mineralisation in all directions, with the **mineralised zone remaining open laterally, and to depth.**

To date, Teranga has drill tested the C-Zone over a minimum strike extent of approximately 600m. Given that historical drilling only tested to shallow depths, we see **further potential for down-dip extensions** of previously identified mineralisation.

The work so far has demonstrated that the mineralisation is hosted within a discrete, mafic volcanic hosted, northwest-southeast striking shear zone system that displays alteration, veining and breccia characteristics **similar to those observed at Golden Hill's nearby high-grade Ma and Ma North prospects.**

Figure 65 - C-Zone Prospect – cross sections



Source: Teranga, Boss

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